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# **East Europe Report**

**ECONOMIC AND INDUSTRIAL AFFAIRS**

**No. 2040**



**FOREIGN BROADCAST INFORMATION SERVICE**

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# EAST EUROPE REPORT

## ECONOMIC AND INDUSTRIAL AFFAIRS

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BITUMEN, GAS DEVELOPMENTS DISCUSSED BY OFFICIAL

Prague PLANOVANE HOSPODARSTVI in Czech No 6, 1980 pp 7-15

[Article by Dr Miroslav Prikryl, deputy minister for fuels and power:  
"Development of Gas Industry and Bitumen Production in the CSSR"]

[Text] The national economic development of our state, accompanied by population growth and further improvement of its living standard, will be determined in the future to a decisive extent by appropriate development of the fuel and energy base. That is why so much attention is being paid to the current and long-range developments of solid fuels, power engineering and heating industry, gas production, including domestic production of bitumen, as well as to the solution of an extensive complex of problems pertaining to rational exploitation of fuels and energy and to the development of new methods to produce them. This follows also from the Directive for Economic and Social Development of the CSSR in 1976-1980, discussed and approved by the 15th CPCZ Congress.

We may observe also in other industrially advanced states a development analogical to that in our country. Growing demands for fuels and energy will be felt gradually also in the developing countries along with their population growth and improving living standard.

1. World Supplies of Fossil Fuels

In order to evaluate the projected development of the fuel and energy base in our state, it is well worth outlining the basic characteristics of the situation on a global scale. First of all, it should be mentioned that the growth of power consumption is proceeding now, and will proceed in the future, at a rate faster than the growth of the population. Thus, for instance, in 1970 that consumption amounted to 7 billion tmp [tons of standard fuel], in 1977 to 9 billion tmp, and for 1980 it is projected at 11 billion tmp, in 1985 at about 16 billion tmp, in 2020 at approximately 25-30 billion tmp, and in 2030 at no less than 40 billion tmp. During the same time the population will increase from about 4 billion at present to 8-10 billion. This corresponds with an average annual consumption of power per citizen of the world of about 4.7 tmp in 2030 as compared with 2 tmp at present.

Naturally, the projected development of power consumption in the world necessarily turns increasingly more attention to existing and future resources. Questions have arisen as to how long supplies of coal, crude oil and natural gas will last, what will happen after fossil fuels sources are exhausted, etc. Numerous groups of scientists, technologists and other experts are working tenaciously to find additional sources of fossil fuels even from unconventional supplies at higher costs for their recovery and production, and to resolve the problems of their most efficient exploitation (for example, by converting them to other types of energy, etc.). The assessment of the exhaustibility of the supplies of fossil fuels for power-engineering purposes is complicated by the demand that the largest possible supplies of fossil fuels be reserved for the future generations as raw materials for chemical processing and for various technological purposes.

As for the viability of fossil fuels, only cursory information may be offered here. For instance, their supplies are estimated at about 12 trillion tmp. At the current rate of their annual consumption which amounts to about 9 billion tmp, at the first glance they may seem adequate, however, we reach a different conclusion if we take into consideration their economic exploitation estimated now at approximately 900 billion tmp, and the rapidly growing consumption of power. Nevertheless, some experts regard that estimate as much too low, and recommend proceeding from more optimistic data:

Total supplies	3.4 trillion tmp
of which: Coal	2 trillion tmp
Oil shale and sand	700 billion tmp
Crude oil	400 billion tmp
Gas	300 billion tmp

--According to other sources, geological supplies of coal are estimated at more than 10 trillion tmp, but technically and economically accessible sources at about 640 billion tmp. World production of coal for the needs of power engineering as well as for conversion into liquid and gas fuels, for further chemical processing and technological valorization will gradually increase. Presumably, world supplies of coal will be extensive even after the year 2000, but they will cover only a lesser part of power engineering consumption.

--Crude oil is not the most important source of power; it covers about 40 percent of energy consumption. Due to its rapidly rising price after 1973, when the so-called energy crisis occurred, some industrial states are facing a difficult economic problem to cover more than 70 percent of their consumption of power with imported crude oil and oil products. Contrary to the above-mentioned estimates, other experts assess world supplies of crude oil at 250 to 300 billion tmp, and its nonconventional supplies at additional 200-300 billion tmp (in oceans at depths of more than 200 m, in polar areas, and in shale and sand). At present it is presumed that the annual increment of new sources of crude oil may continue



to grow until 1985, then decline, and no later than in 1990 its consumption will exceed the projected increment of sources. It may be assumed that oil supplies will suffice to cover its consumption for 30 to 40 years, if nonconventional sources are taken into consideration.

--Although the consumption of natural gas has been growing rapidly in the world, it is still less than half of oil consumption. Certain world supplies are quoted as 84 billion tnp, i.e., about 70 trillion cubic meters, but they may be even higher--about 276 billion tnp, i.e., approximately 230 trillion cubic meters (some experts estimate the potential supplies even higher, at 300 billion tnp, or about 250 trillion cubic meters). The current production of natural gas amounts to about 1.42 trillion cubic meters/year, and should increase to about 4.1 trillion cubic meters/year in the year 2000, and drop to 3.4 trillion cubic meters/year in the year 2000; thus it should peak during that period. Conventional sources of natural gas will cover consumption for about 50 years. Moreover, nonconventional sources of natural gas and methane produced from coal, from the biomass, etc., will be exploited. The capacity of the accessible supplies of natural gas will depend on its price within the fuel-energy complex in a given country at a given time. For example, the price of natural gas produced from the sea bottom will rise in proportion to the depth, the distance from the place of consumption, the applied production technology, etc.

The estimate of world supplies of fossil fuels must be supplemented with several data about their sources in the CSSR. In our country the production of coal, above all, of lignite, which is steadily expanding, makes it possible to generate electric power, lighting gas, coke, coke gas, heating gases for our industry, steam, and supply our population with graded coal, heat, etc. Supplies of coal will be exhausted in the next century.

Our supplies of natural gas, and in particular, of oil, are considerably less extensive, nevertheless, increasingly more attention is being paid to their research, survey and exploitation due to their growing importance in our national economy. It is enough to mention the contribution of our domestic production of natural gas to the satisfaction of the growing demands during the winter months. Of course, we must import most of crude oil and natural gas from the USSR.

#### Search for Additional Sources of Energy

The search for energy from other sources is prompted by the exhaustibility of the world supplies of fossil fuels and their necessary preservation for the future generations (primarily for chemical processing and technological purposes). We are witnessing diligent studies, search for solutions, and even production of energy from nuclear materials in light-water reactors, and from a long-range point of view, in high-temperature and breeder reactors, from solar radiation in both the low-temperature and high-temperature variants, from thermonuclear fusion, from geothermic

sources, wind, in coastal areas from the tides, etc. For instance, the supplies of energy obtainable from nuclear materials are quoted as follows:

Total sources of energy	20.3 trillion tnp
With the use of light-water reactors	300 billion tnp
With the use of breeder reactors	20 trillion tnp

Thus, the extent of the exploitation of such supplies depends on the period of the introduction of breeder reactors into operation. Nuclear power is precisely the only practical vital alternative which will facilitate the gradual replacement of fossil fuels. Of course, the precondition for that development is a prompt transition from the current light-water reactors which use the relatively rare uranium 235 to breeder reactors whose introduction into operation will substantially increase the supply of nuclear power. They will make it possible to convert uranium 238 into fissile plutonium 239 and thorium 232 to fissile uranium 233.

Problems of direct conversion of thermal, light, nuclear and chemical energy into electric power in magnetohydrodynamic generators, and furthermore, in electrohydrodynamic, thermoelectric, thermoionic and photoelectric generators and in fuel cells are now being studied and solved on a global scale. Various methods of production of hydrogen from water and its transport, storage and subsequent utilization as heating gas for generation of electric power, as a transitional form for storage of electricity, as chemical raw material, etc., are now under intensive study. Nuclear heat is under consideration for conversion of coal into gas and for the production of methanol to which great importance is attributed for the future, most of all, in power engineering, in endothermic hydrocarbon oxidation, and so on.

Studies and solution of problems concerning rational exploitation of fuels and energy have a very meaningful place in the above-mentioned worldwide program of problem-solving research involving, among other things, the development of thermal pumps using the heat of water and air, or low-temperature waste heat for heating purposes. Considerable efforts are being made to eliminate and cancel the untoward effects of production, processing and exploitation of fuels and power on the environment.

Next to the generation of energy from coal in conventional power plants in the CSSR, as abroad, generation of electric power from nuclear materials is the only viable alternative to cover its growing consumption in the future. We are applying, and will continue to apply, primarily the experience of Soviet experts in construction of nuclear power plants, but our own contribution to the construction of nuclear power plants will be significant within the CEMA states.

## II. Projected Development of Gas and Bitumen Production in the CSSR

Along with bitumen production, gas production is the most rapidly developing factor in the fuel and energy complex in the CSSR. Before 1990, and



apparently, even thereafter, the Czechoslovak gas industry will have the vital task of facilitating the transit of natural gas most of all from the USSR to the GDR, Austria, Italy, France and Yugoslavia. Import of natural gas to the CSSR will be simultaneously expanded and its share in our fuel-energy balance will increase. Our domestic production of natural gas has a very important place in supplying consumers with natural gas and in particular, in covering its consumption during the winter season. Another share of the consumption of high-grade gas fuels will be based on the production of lighting gas and from the distribution of propane-butane.

#### Sources of Natural Gas

The key precondition for the development of gas production in the Seventh Five-Year Plan and in the outlook up to 1990 is the guarantee of higher deliveries of natural gas from the USSR. They will be assured by the completion of the construction of the second branch of the Soyuz transit gas pipeline on the territory of the USSR from Orenburg Oblast to the eastern frontier of our republic, and by the construction of the third branch of a transit gas pipeline--the Consortium gas line (1978-1984). Thus far, further increases of the deliveries of natural gas after that date have not been specified.

Necessary preconditions must be created for the envisaged growth of our domestic production of natural gas whose importance will further increase.

Higher consumption of natural gas during the very cold winters on the Soviet territory will also reduce winter deliveries in the future, but they will be balanced during summer months. For that reason we must reassess the demands for the construction of underground reservoirs, their efficient storage capacity, maximum production and compression capacities, and also, build up supplies to cover short-term peak consumption.

Table No 1 indicates current considerations in terms of Czechoslovak imports of natural gas in 1975-1990 in percents:

Table No 1

1975	1980	1985	1990
Actual	Plan	Directive	Projection
100	238	257	346

The envisaged development of our domestic production of natural gas in 1975-1990 in percents is presented in Table No 2:

Table No 2

1975	1980	1985	1990
Actual	Plan	Directive	Projection
100	52	131	162

It is necessary to point out here an important problem which must be promptly and successfully resolved in the future in the interest of the delivery of Soviet natural gas to our territory. The required range of modern turbosets with higher capacities and efficiency must be developed and manufactured within the required schedule, and the existing compression plants must be modernized and new ones built.

Production of domestic crude oil and gasoline is being developed to supplement our domestic production of natural gas. Table No 3 represents the development of production in 1975-1990 in percents:

Table No 3

1975	1980	1985	1990
Actual	Plan	Directive	Projection
100	65	67	141

#### Sources of Lighting Gas

While the production of lighting gas has already been terminated in Bratislava and then in Kosice as the last city in the SSR, the development of the fuel-energy base of our state demands that preconditions be created for an expansion of the function of the lighting gas subsystem in the CSR approximately until the year 2005-2010. Thus, it will be possible to expand to the necessary level overall supplies of high grade gas fuels among which natural gas will attain an increasingly larger share. This process will facilitate also the most efficient processing of lignite convertible to gas in pressure gas plants with concurrent production of profitable side products, above all, lignite tar, phenols, benzene and ammonia. It will help solve the shortage of graded coal, especially in view of the partial replacement of graded coal in households by lighting gas.

On the basis of flaw detection and other tests of pressure gas lines the chemical plants of the Czechoslovak-Soviet Friendship Communal Enterprise in Litvinov determined late in 1978 that, contrary to previous projections, 8 old generators of a total of 16 must be gradually removed because of the considerably deteriorated materials and resistance of their shells, and that the viability of the remaining 8 generators must be reassessed, which will reduce and cut short the production of lighting gas.

The anticipated development of sources of lighting gas for the 1975-1990 period is presented in percents in Table No 4.

Table No 4

1975	1980	1981	1983	1985	1990
Actual	Plan		Projection	Directive	Projection
100	111.0	111.0	101.0	97.0	73.0

Nevertheless, the demands for sources of lighting gas are greater, and therefore, it appears that its sources should be expanded by several measures, such as, for example:

- Stabilization of operations in facilities for the production of mixed gas made from nitrogen and natural gas for addition to lighting gas in the 25 February Integrated Fuel Works in Vrasova;
- Accelerated construction of facilities for production of mixed gas made from nitrogen and natural gas for addition to lighting gas in the A. Zapotocky Integrated Fuel Works in Usti nad Labem. In order to complete the construction, nitrogen compressors to be delivered by the Ceskomoravska-Kolben-Danek in Prague are of essential importance;
- Introduction into operation of the first series of lighting gas detoxification units in the A. Zapotocky Integrated Fuel Works in Usti and Labem;
- Guaranteed delivery of spare parts from the Ceskomoravska-Kolben-Danek in Prague for compressors in the gas works in Dolni Sucha;
- Prompt switching of major consumers of lighting gas to natural gas according to the proposal;
- A review of the fuel base for lighting gas and termination of the construction of other bases;
- A review and balance of the planned switching of lighting gas consumers to natural gas;
- Proposal concerning other transfers of major consumers of lighting gas to natural gas in 1981 and 1982, so as to reduce the disproportion between the limits for fuel bases and the output of fuel bases;
- Balance between sources and consumption, or measures in the area of output of the lighting gas fuel base.

#### Sources of Propane-Butane

The development of the consumption of propane-butane supplied by the filling plants of the syndicates of the Czech Gas Enterprises and of the Oil and Gas Industry in Bratislava, as well as of specific consumption of propane-butane and the range of its consumers has been considerably affected by the reduced amount of propane-butane for the filling plants due to its utilization as a raw material in chemistry. The change of sources in 1975-1985 is presented in percents in Table No 5.

Table No 5

1975	1980	1985
100	125	125

The above-mentioned actual situation calls for controlled consumption and thus, for balanced sources and needs.

#### Development of Gas and Bitumen Production in Correlation with Capital Investment

The main task of gas production in the Seventh Five-Year Plan is to complete the construction of the third branch of the Consortium transit gas pipeline and to provide preconditions for higher imports of natural gas after 1985, which calls for the development and construction of modern turbosets for modernization of existing compressor plants and for plants under construction.

Successful operation of transit gas pipelines depends also on the most efficient utilization of waste heat in compressor plants, as much as possible throughout the year, not only in agriculture but also in other branches of industry, for which the gas industry must provide preconditions by securing deliveries of necessary equipment from the organizations of the Federal Ministry of Mining and Heavy Engineering.

Its further tasks which stem from the plan to increase imports of natural gas include the development of bitumen production, particularly of natural gas, mostly during the winter season. Substantially accelerated and intensified research and survey operations in prospective areas, which are envisaged, will increase industrial sources of high-grade bitumen (particularly in greater depths) and create preconditions for their expanded production. This task cannot be fulfilled without the necessary technology and required materials. Because such equipment and most such materials are not manufactured in the CSSR, they must be gradually imported from the socialist and capitalist states. Moreover, transportation technology of Czechoslovak manufacture must be improved and the number of qualified experts enlarged.

The coverage of seasonal and peak consumption of natural gas is linked with its expanding sources, because its seasonal consumption in winter and its peak short-term consumption will be even more acute.

The projected distribution of its consumption during the year, characterized by a faster rate of fuel consumption, especially by the population, does not correspond with the supply potential of vital resources. This applies just as much to natural gas supplied by the transit gas pipeline and by the Bratrství [Brotherhood] pipeline. The above-mentioned disproportions are resolved primarily by storing some of the supplies delivered in the summer months in underground reservoirs that are under construction in deposits of natural gas not yet fully exhausted.

The maximum production capacity in million cubic meters/day and efficient storage capacity in million cubic meters/year

1980

1985

1990

11.1/916

22.0/1,990

31.0/3,050

The proposal for capital investment includes underground reservoirs in Hrusky II and III and in Dolní Dunajovice, Příbor and Lab III (first, second, and third stage) for the required expansion of storage capacities of underground reservoirs and their production and compression capacity in the seventh and eighth five-year plans. Furthermore, it has been proposed that storage wells be built in Bohutín and Milín, in particular, to supply the capital city of Prague with natural gas after 1990. The former is scheduled to function as a liquefaction plant covering peak short-term consumption. If the research of storage well fails to bring positive results, additional liquefaction plants or underground reservoirs must be built. In general, the parameters of the reservoirs will be developed in agreement with decision of the Presidium of the government of the CSSR No 223/76. Only the proposed underground reservoirs in Lab IV will be replaced by those in a more suitable location in Dolní Dunajovice where the construction is scheduled to begin no sooner than toward the end of the Seventh Five-Year Plan.

The growing consumption of natural gas calls also for supplies for peak short-term consumption. The construction of liquefaction plants for the capital city of Prague is planned for the Seventh Five-Year Plan and the construction of two other plants are scheduled for the areas of Ostrava and Brno for the Eighth Five-Year Plan.

As already stated, the development of the fuel and energy base makes it imperative to extend the viability of the lighting gas subsystem to approximately 2005-2010. For that reason, the construction of plants is now nearing completion and the facilities of the 25 February Integrated Fuel Works in Vřesova and of the A. Zapotocký Integrated Fuel Works in Usti nad Labem are undergoing remodeling. This is connected with the development and modernization of pressure generators and their gradual deliveries beginning in 1985. This development will lead to comprehensive improvements of the operation of such generators, including higher output; it was prompted, however, primarily by the views of the manufacturer, the ZVU [Victorious February Plant] in Hradec Králové, that all generators must be replaced in order to guarantee the operation of pressure plants until 2005-2010.

The only underground reservoir for lighting gas in Lobodice will be used approximately until 1988-1990. The expansion of its maximum production capacity is now under way.

The expanding subsystem of natural gas and the prolonged existence of the lighting gas subsystem are linked with another essential tasks of gas and bitumen production--the construction and modernization of high-pressure gas pipelines and of local networks and mains. Special attention must be devoted especially to those areas where insufficient transport capacities are beginning to be noted now, or may be felt during the seventh and eighth five-year plans, and also to local networks in towns switching to natural



gas. For the seventh and eighth five-year plans, this increment in long-distance gas lines, local networks and mains for natural gas and lighting gas is envisaged (in km) as follows:

Increment of long-distance gas pipelines, local networks and mains for natural gas and lighting gas in the seventh and eighth five-year plans:

	Seventh Five-Year Plan	Eighth
Increment of high-pressure gas lines	1,996	2,200
Increment of gas lines in local networks and mains	2,920	2,700

Specific assignment of investment funds for planning and construction of gasline networks for the seventh and eighth five-year plans is under consideration, both in the category over Kcs 2 million and under Kcs 2 million of budget costs. The necessary construction capacities, mechanization facilities, etc., must be allocated for that purpose.

During the seventh and eighth five-year plans the consumers will continue to switch from lighting gas to natural gas. The progress of further gasification with natural gas and lighting gas will depend on the accessible sources of both gases and on the construction and modernization of high-pressure gaslines, local networks, mains and appropriate housing installations. Gasification of about 80 communities is envisaged for the Seventh Five-Year Plan, and of about 70 communities in the Eighth Five-Year Plan. Thus, the number of consumers supplied with natural gas and lighting gas will increase by 378,000 in the Seventh Five-Year Plan, and by 345,000 in the Eighth Five-Year Plan.

As for propane-butane, it may be noted that its development, modernization and rationalized delivery to consumers have considerably advanced since 1976, nevertheless, preconditions must be set for further acceleration of that program. A modern filling plant and a container repair shop have been put into operation in Bratislava and a container repair shop in Dolní Sucha, and the capacities of some other plants were expanded in the last 3 years. New filling plants must be built, the turnover in filling plants and container repair shops must be stepped up, and containers must be processed more efficiently with the aid of pallets and of palletting and depalleting equipment.

The program for modernization of the filling plants and repair shops for propane-butane containers, and distribution of propane-butane in containers, barrels and by means of tank trucks, which is scheduled to reach its peak in the Seventh Five-Year Plan, will be completed in the Eighth Five-Year Plan. The construction of seven filling plants will provide the capacities necessary for filling and repair of containers; some obsolete and inefficient plants may be eliminated. Filling plants and repair shops are under construction in Satalice II (Central Bohemia Kraj), Kralovice (West Bohemia

Kraj), and in Martin and Michalovce in the SSR. Moreover, preconditions are being made to facilitate further modernization of propane-Butane distribution.

The directive for economic and social development in 1976-1980, adopted at the 15th CPCZ Congress, dealt also with the main task in gas and bitumen production. "Along with the construction of transit gas pipelines, to provide the means of transport and automated equipment, and to create preconditions for the future central management of the gas industrial system and transport of heating gases." The legitimacy of the above-mentioned program appears from the fact that the construction of the Consortium transit gas pipeline and the completion of other vital construction works (underground reservoirs, gas lines, etc.) will enable the gas industrial system in the CSSR in its domestic and foreign operations to gain a very complex and dynamic structure, including transit, interstate transport, production, exploitation, processing, storing, distribution and consumption of natural gas and lighting gas. Its central management is not feasible without the accelerated construction of the automated control system. Therefore, a system of construction projects--Automated Control System for the Gas Industrial Program in the CSSR--will be built during the Seventh Five-Year Plan.

It is envisaged that during the seventh and eighth five-year plans the capacity of production of the machine-engineering and repair base will rise in 1980 to 255 million, in 1985 to 458 million, and in 1990 to 544 million. Such a growth will facilitate more efficient exploitation of the existing means of production and the construction of vital projects, such as the storage and plants for transit gasline in Senica, and the construction of central plants in Gbely. The construction base for the gas industry in individual enterprises will be gradually expanded, so that in 1985 it will be higher by about Kcs 100 mil/year than in 1980.

#### Rationalization of Gas and Bitumen Production

An essential task in the production of gas and bitumen calls for further reduction of specific consumption of fuel and energy and for rational exploitation of all heating gases in cooperation with other ministries. It is evident that as compared with other industrially advanced countries we have exceeded the demands in most areas of consumption of power. Obviously, we shall gain new sources of heating gases by means of rational consumption rather than by capital investment, import, etc., because those methods will become increasingly more difficult. The solution of problems concerning rationalization has now become extremely urgent due to the tension between the resources and the consumption of graded coal and coal for power plants. Successful solutions to problems of rational exploitation of heating gases, which are of vital importance to all of our national economy, must be promoted much more vigorously than ever before. This is a continuous process.

## Development of Science and Technology

The development of science and technology implemented by our ministry in its own capacities (i.e., in the Institute for Research and Exploitation of Fuels in Prague-Bechovice, and in scientific research institutes of both syndicates), as well as in cooperation with other ministries is focused on the problems under discussion. Naturally, this activity must be put on a rational basis and the results of research must be put into practice much more promptly. Special attention should be devoted to those tasks which affect the needs of rationalization of fuels and energy, all types of losses, more efficient productivity of labor, lower investment and operational costs, substitution for materials in short supply, extension of service life of equipment, reduction of current schedules in capital investment, lower imports, etc.

In conclusion, it should be emphasized that gas and bitumen production is the most rapidly developing sector in the fuel-energy complex. Its development until 1990 presupposes, by the same token, a successful solution of several relevant tasks, among them in particular the growing imports and domestic production of natural gas, including the construction of underground reservoirs and long-distance gas pipelines and local networks. Furthermore, this concerns successful solutions of the disproportions between resources and consumption of lighting gas, and the extension of service life of lighting gas subsystems, the construction of filling plants and repair shops for propane-butane, including the necessary program of modernization of its distribution, the switch of consumers from butane to natural gas, gasification of additional communities, and indubitably, also the construction of an automated control system for the gas industry in the CSSR and its interstate and foreign operations. Because it will be increasingly more difficult and expensive to import natural gas, inevitably more attention must be paid to our domestic sources of fossil fuels, to rational exploitation of fuels and energy, and naturally, also to the study and solution of problems related to generation of energy from new sources, especially from nuclear materials, solar energy, etc. Next to economic contributions, the development of gas and bitumen production will help substantially enhance the purity of the atmosphere in our state and improve the housing standard of our population.

9004

CSO: 2400

## INVENTORY OF ACTUAL, POTENTIAL NATURAL RESOURCES PUBLISHED

Budapest MAGYAR HIRLAP in Hungarian 9 Aug 80 p 6 WA

[Excerpts] This year the nation will spend 3.6 billion forints to explore mineral raw materials as well as on determination of the quantity and quality of underground water. This includes preparation for the mining of mineral resources, detailed research to lay the foundations for extraction, assessment, economic grading of mineral deposits and record-keeping of everything involved. In addition to the foregoing, geologists are also concerned with finding suitable locations for settlements, regional development, geological bases for road networks, soil melioration and recultivation, irrigation as well as the geological tasks connected with natural and environmental protection.

Domestic exploration produced good results during the Fifth Five-Year Plan. The target during this period was to locate 30 million tons of industrial hydrocarbons. By the end of 1979, 36.8 million tons had been found. During the first 4 years of the past plan period, geological research found replacement for practically all the natural gas used up to that time and nearly one-third of the petroleum.

The goal for the coming plan period is discovery of 35 million tons of industrially usable resources. The continuous development of hydrocarbon-geological knowledge is an essential basic condition for this. Included will be calibration of 3,000 seismic lines per year and sinking 200 kilometers of exploratory drilling. Between 1981-1986, most intense research will be conducted between the Danube and the Tisza, in the Eastern Great Plain Region and in the basins of Bekes and Szeged. A smaller number of drillings will be made in Zala and Drava basins as well. The success of exploration for hard coal between 1976-1979 is indicated by the fact that it not only made up for the hard coal used, but increased its production over a 5-year period eight-fold, production of brown coal three-fold and lignite production by 30-fold. By the end of 1979, 200 million tons of new industrial hard coal [as printed] had been found in the north-eastern part of the Mecsek region which has been named Maza-Del. Exploration planned and in progress is expected to turn up an additional 120 million-180 million tons. The deposits in the new hard coal region are equivalent to those of the Pecs-Komlo mines. Furthermore, they surpass the former in accessibility and cokability.

The brown coal basin of Borsod is one of our important sources of energy which supplies the needs of the population as well as those of power plants and coal mining for industrial purposes. Within the nationwide program for lignite exploration, 2.25 billion tons of lignite have been located and there are an additional 800 million tons in prospect which can be exploited by open pit mining.

During the coming plan period exploration of the Maza-Del will continue and is slated for completion by 1985. Laying a geological basis for the planned mining of the Borsod brown coal basin is of major importance. Research aimed at discovering what the prospects are for offsetting diminishing returns from mines of Ajka and Nograd which are nearly worked out is underway.

The goal in bauxite mining was to discover 15 million tons of new industrial resources as well as to conduct the detailed geological research required for investments planned at Nyirad and Iharkut II. Highly experienced Hungarian bauxite prospectors all but completed their task in 4 years by locating 14.8 million tons of industrially usable resources. The value of our bauxite deposits has been greatly enhanced by the changes in the world economy. Discovery of 15 million tons of industrially usable resources as well as development of mining and extraction at Nyirad, Bakonyoszlop and Iharkut are the goal of the coming plan period.

Discovery of internationally significant deposits of nonferrous metals at considerable depths at Recsk is a noteworthy achievement. Their extraction is expected to net the economy an annual 50,000-60,000 tons of copper, and further deep exploratory drilling will produce between 30,000-40,000 tons of lead and zinc. Between 1976-1980, 30,000 meters of surface drillings were made at Recsk, and two 1,200-meter deep shafts were sunk as well as a gallery which connected the two shafts. In addition, about 40,000 meters exploratory drillings were made within the mine.

CSO: 2500



LONDON EMIGRE DAILY'S STRIKE REPORTAGE NOTED

Strikes in URSUS Plant, Tczew

London DZIENNIK POLSKI in Polish 4 Jul 80 p 1

[Text] Without forewarning, the Polish government has raised meat prices. This has touched off strikes in the URSUS tractor plant near Warsaw and in the automobile parts factory in Tczew in Pomorze.

According to a spokesman of the Social Self-Defense Committee (KOR) in Warsaw, in both factories workers stopped work and approached the management demanding pay raises to compensate for the higher meat prices.

Mindful of the serious incidents that followed the increase in meat prices in 1976, the management of both factories announced that they would weigh the workers' demands and guaranteed that repressive measures would not be taken against the striking workers. There were no incidents.

The price increase was put into effect Tuesday, but officials of the Polish People's Republic did not inform the populace until Wednesday evening in a special television broadcast.

The increase was carried out indirectly, namely, the better part of higher quality meat supplies and more expensive poultry such as duck and turkey has been earmarked for so-called commercial stores, in which prices are nearly twice those of regular butcher shops. Commercial stores are operated for profit, while regular butcher shops must be subsidized. In the latter, meat is of a middle grade or is generally in short supply.

Long lines form outside butcher shops.

In practice, the order of Polish People's Republic officials means that persons with high incomes will be able to purchase meat. On the other hand, the broad masses either will be able to buy meat of low quality (after waiting for a long time in a line) or they will be completely deprived of it.

In 1976, workers' riots in reaction to higher meat prices began at the URSUS plant. The government was forced to yield and roll back the price increase.

Once again society was informed about a price increase. A commentator on Warsaw television attempted to explain that in reality there is no price increase, that there will be no change in prices either in commercial stores or in the regular butcher shops. However, he did not add that in the regular butcher shops for all practical purposes there will not be any meat, or if so, only scraps.

#### Government Explanations, KOR Communique

London DZIENNIK POLSKI in Polish 5 Jul 80 p 2

[Text] Officials of the Polish People's Republic have admitted that the increase in meat prices has touched off universal unrest among workers, but they have announced that they will not withdraw the increase. In many factories on-the-spot strikes have erupted. No serious incidents have occurred, however. The Social Self-Defense Committee [KOR] has called upon society to support the workers' demands.

As we reported yesterday, the price increase has been put into effect in such a way that Polish People's Republic officials have shifted the better part of supplies of meat, poultry and cured pork products to so-called commercial stores, whose prices are nearly double those of regular butcher shops. Society was not informed in advance of the intended price increase.

#### Nonsensical Explanations

Official government spokesman Miroslaw Wojciechowski said that the delay in the announcement of the price increase of 48 hours was caused by...an unfortunate oversight. Wojciechowski also attempted to deny that it had led to strikes and said only that "heated discussions arose" in factories. He added that under no circumstances will the government roll back the price increase.

According to reports of Western press agencies, government circles in unofficial conversations have admitted that brief strikes have ensued in many factories. In these conversations there has emerged the distinct fear of repeating the occurrences of 1976, when an increase in meat prices was followed by violent workers' demonstrations.

#### KOR Communique

The KOR on 2 July published a statement describing the course of the current strike activity and its causes. In this statement we read, among other things, that:

"We have been informed that at the news of an increase in meat prices on 1 July, workers of three enterprises of the URSUS mechanical plants struck.

On 2 July several departments of other enterprises of the Ursus mechanical plants went on strike. Altogether, of the 17,000-person work cadre of the Ursus complex, approximately 40 percent have taken part in the strike yesterday and today.

"The striking workers call for a cost of living allowance to compensate for the price increase and set forth demands in conjunction with working conditions and wages in particular enterprises (for example, a threefold increase in the differential for work under conditions that are hazardous to health, a 10-percent differential for work on the second shift and the like).

"The strikes last from 2 to several hours, and are interrupted due to negotiations with the management which is obliged to weigh the demands and give an answer at a later time. The management makes written commitments to the strikers' representatives to refrain from repressive measures against participants in the strike. In the Ursus plants, the strike continues in the department of motor assembly and in the gears division.

"On 2 July in Tczew, a strike of the POLMO plants which produce automobile parts began. The entire first shift went on strike, and at 2 pm the strike of the second shift began. Participants in the strike are demanding higher wages to compensate for the price increase.

"Information has reached us concerning strikes in other factories, but as yet we have not been able to confirm these reports.

#### The Disregard of Society

"The manner in which the increase was put into effect once again shows the complete disregard for society and its rights. The economic crisis has already lasted for several years. State officials have done nothing to rectify the situation of the country. They transfer the consequences of their incompetence to society. A price increase without basic economic and social reform will not improve anything. The KOR is in total solidarity with the strikers and supports their demands. In particular we emphasize our support for the demand of a cost-of-living increase, which can at least partially check the impoverishment of society that is now occurring. We demand complete information on an increase in food prices. We demand a full disclosure of the foodstuffs balance: production, consumption, foreign trade and other outlays. We demand complete information concerning the extent of workers' protests. We warn the state officials of the Polish People's Republic against the irresponsible provocation of society which will lead to national catastrophe. We call for the establishment of solid negotiations with democratically chosen representatives of workers' cadres. We address workers' cadres throughout Poland. We caution against those forms of protest which authorities may make use of to provoke scenes... We turn to the whole of society to call for the solid support of workers' demands."

## Meat Price Hikes Not Rescinded

London DZIENNIK POLSKI in Polish 7 Jul 80 p 1

[Text] Under the influence of the ferment among workers and sporadic strikes touched off by an increase in meat prices, the government of the Polish People's Republic, while not withdrawing the increase, has been forced--as reported by the REUTER agency--to increase wages. Sporadic strikes have affected many factories and shipyards.

The wage increases amounts to approximately 10 percent, or the sum workers demanded as a cost-of-living increase. Authorities increased meat supplies in cities in which workers' ferment was greatest.

According to reports of Western press agencies, a certain calm has ensued and it appears that a recurrence of the violent workers' demonstrations of 1976, which arose as a result of an increase in meat prices, is not threatened. At that time, the government had to come forth and rescind the increase. In this case, the officials of the Polish People's Republic chose a middle course; they maintained the price increase, but at the same time they increased wages.

Agency reports also show that strikes occurred throughout Poland and included dockworkers. A KOR communique published by us on Saturday reported on strikes at the Ursus plant near Warsaw and in Tczew, but it notes that it has been informed of strikes in other cities. Without a doubt, the news reported by Radio Free Europe, which immediately announced the unrest at Ursus and in the automobile parts factory in Tczew helped to spread the striking activities.

As already reported in DZIENNIK POLSKI, the increase in meat prices is based on the transfer of supplies of the better part of good grade meat to so-called commercial stores, in which prices are double those in regular butcher shops.

What most inflamed the people was that authorities gave no advance warning of the increase in prices and a government spokesman, Miroslaw Wojciechowski, explained that this was an "unfortunate oversight."

On the other hand, the deputy minister of domestic trade, Edward Wisniewski, stated that "the government preferred to apply surprise tactics."

Mieczyslaw Rakowski, editor of the weekly POLITYKA, published an article in which he wrote that society is not aware of the seriousness of the economic situation of the country. "Our economy," writes Rakowski, "is dismembered, its directorship is incompetent and operates contrary to all rationality, and statistics are quite frankly often falsified." This is an unusual admission of the disastrous management of government officials coming from the regime's journalist spokesman.

The KOR has been noting the situation for a long time. In a KOR communique which we published on Saturday the statement is clearly made: "The economic crisis has already lasted for several years. State officials have done nothing to rectify the situation of the country. They transfer the consequences of their incompetence to society."

#### Gierek and Aroused Workers

London DZIENNIK POLSKI in Polish 11 Jul 80 p 4

[Text] Edward Gierek promised a pay raise to the most poorly paid workers and pensioners to quell the restlessness of society following an increase in meat prices. The tone of his statement was conciliatory.

Gierek spoke at a plenary session of the PZPR Central Committee in Warsaw.

As we reported in the DZIENNIK last week, an increase in meat prices touched off unrest among workers and led to strikes lasting several hours in many factories, shipyards and mines. Workers demanded concessions of a cost of living increase. The management of enterprises yielded, fearing a recurrence of the violent workers' demonstrations of 1976, which also erupted as a result of an increase in meat prices.

It is difficult to evaluate Gierek's address without a complete text at hand as to whether his statement signifies a partial withdrawal from the promise made by the various managers of industrial plants. In conversations with striking workers, promises were made to grant them all a 10-percent cost-of-living increase. Meanwhile, Gierek spoke--as it appears from agency reports--only of the most poorly paid workers and pensioners. The tone of his address, however, was conciliatory, as was expected.

Gierek also stated that the economic situation of Poland is complex and very difficult. But he also pointed out that Poland is in a position to overcome these difficulties.

A PZPR official revealed that rains have caused much damage to root crops. However, he expressed the hope that this year's grain harvest will be abundant.

#### Strikes in Warsaw, Swidnik

London DZIENNIK POLSKI in Polish 12 Jul 80 p 2

[Text] A new wave of protest strikes has begun in Poland in conjunction with an increase in meat prices. Gierek appeared on television together with three regime ministers and a member of the Politburo: they presented society with a gloomy picture of the economic situation sweetened only with the assertion that in the first half of the current year the Polish People's Republic achieved a surplus in the balance of trade with the West.



A spokesman for the Social Self-Defense Committee [KOR], Jacek Kuron, has informed foreign communications sources that since Gierek's speech at a communist party Central Committee meeting (about which we reported yesterday) workers struck in at least four factories, demanding higher increases than those granted them to balance out the increase in meat prices.

The strikes took place in Warsaw automobile and radio apparatus plants and in several departments of the Ursus tractor factory, in which only a portion of the workers were granted a 10-percent increase and the rest only 5 percent. Moreover, on Tuesday a cadre from the transportation equipment factory in Swidnik near Lublin went on strike. A government delegation was sent from Warsaw for negotiations with the workers of this factory, who are also demanding that the increase in meat prices be equalized by a wage increase.

#### An Appearance by Gierek and His Comrades

In a special television program Gierek appeared in the company of three ministers--Klonica, Kowalik and Karski, attended by an unnamed member of the Politburo.

Gierek promised a wage increase to only the most poorly paid workers and pensioners and warned that the difficult situation of the Polish People's Republic does not allow for significant general wage increases.

For the first time, Gierek admitted that Poland cannot elude inflation and thus workers will have to reconcile themselves to some of its consequences. The wage increases which have been effected and those which, to a limited extent, are still being put into effect--he stated--only partially balance out the price increase in articles of basic consumption and other articles. He declared that state outlays must be closely contingent upon industrial output and thus upon the workers.

Agriculture Minister Leon Klonica declared that there is less meat on the market this year in the Polish People's Republic: the deficit in comparison to last year is 50,000 tons. The reason is a poor harvest of grain and fodder in 1979. Klonica added that torrential rains flooded 200,000 hectares of farmland during recent weeks, which seriously threatens this year's harvests.

Domestic Trade Minister Adam Kowalik announced a deficit in supplies of butter, since the import of butter from the Common Market was suspended. He stated that the Polish People's Republic has had to limit the import of many items considerably in order to reduce the deficit in the balance of trade, which is \$19.5 billion in relation to the West.

Restrictions in the imports division were accompanied by a campaign for increasing exports. Foreign Trade Minister Ryszard Karski announced that in this sphere success has finally been achieved. He stated that in the

course of the first 6 months of the current year a surplus of 600 million foreign exchange zloty (\$200 million) was achieved in trade with the West. In this same period, Karski stated, the Polish People's Republic imported 4.7 million tons of grain and fodder, paying nearly a billion dollars for this exchange.

### Second Wave of Spontaneous Strikes

London DZIENNIK POLSKI in Polish 14 Jul 80 p 1

[Text] Continuing among Polish workers is the ferment connected with a price increase for meat. A second wave of sporadic strikes has occurred. According to a report from a KSS/KOR spokesman, sporadic strikes broke out generally in 21 large industrial plants. The workers hold that the pay increase of 5 to 10 percent proposed by the government is insufficient.

Authorities are attempting to hide from the general population the fact that the strike movement associated with increased meat prices has spread throughout the entire country. Following the first wave of sporadic strikes, which broke out after the announcement of 1 June [as published] price increases, a second wave has occurred in the last few days.

### In 21 Factories

KSS/KOR spokesman Kuron has stated that the strike has spread to 21 large industrial plants, including the automobile plant at Zeran, which employs 20,000 workers.

Officials of the Polish People's Republic cover up the strikes and speak only of "heated discussions" taking place in large factories.

The second wave of sporadic strikes broke out following a television address by Edward Gierek in which he announced only minor wage increases. Workers at the factory in Zeran struck for several hours, rejecting a proposed 5-percent increase and demanding 10 percent.

### Fears of the Regime

KSS/KOR published a communique on the subject of the situation on the labor market asserting that authorities in several cities raised the price of meat and later withdrew the price increase, only then to increase prices once again.

Undoubtedly this is the fear of fears of the regime in the face of a recurrence of the violent workers' demonstrations of 1976 which erupted as a result of an increase in meat prices. The vacillation in the behavior of authorities has now resulted in a false report that the government has withdrawn the increase in meat prices.

## Governmental Conditions

Official government spokesman Miroslaw Wojciechowski attempted to convince journalists at a press conference in Warsaw that quiet reigns everywhere and that in industrial plants talks are being conducted with workers on the subject of the increases, which must however be associated with an increase in productivity. Wojciechowski stated that the reaction of workers to the increase in meat prices was unexpected.

As a result of Wojciechowski's statement it appears that eventual wage increases will be contingent upon productivity, increasing norms and the like.

An article in TRYBUNA LUDU, the PZPR organ supports this notion.

TRYBUNA LUDU complains of a decrease in productivity, the poor quality of goods, a falsification of statistical data and a lack of discipline in industrial plants. The daily writes that for "wages to increase faster than productivity" is intolerable. TRYBUNA LUDU writes: "Managers falsify statistics by artificially exaggerating production output for the purpose of increasing wages."

Undoubtedly, the complaints of the PZPR organ are close to the truth, but the question is why TRYBUNA LUDU does not admit that the turmoil in industry is a consequence of the structure which has been thrust upon Poland.

## Worker-Management Wage Hike Talks

London DZIENNIK POLSKI in Polish 15 Jul 80 p 4

[Text] Workers in six factories in Poland are conducting talks with management on the subject of wage increases. The announced increase in meat prices aroused dissatisfaction throughout the country. In 27 factories workers temporarily halted production, demanding higher salaries. Authorities made wage hikes contingent upon an increase in production and the introduction of new, higher work norms. Factory managers were warned by authorities of the consequences that threatened them in the event of wage increases under conditions of the continuance of current production levels.

## Workers Receive Wage Increase

London DZIENNIK POLSKI in Polish 16 Jul 80 p 1

[Text] In at least 30 industrial plants, workers gained a 10-percent wage hike in answer to their demands, KSS/KOR spokesman Jacek Kuron reported. At a truck plant in Lublin the management promised workers 1,000 zloty more per month, Kuron stated. As we have reported in the DZIENNIK, spontaneous strikes have recently broken out in many enterprises in the Polish People's Republic as a result of an increase in meat prices.

### Strikes at 33 Plants

London DZIENNIK POLSKI in Polish 17 Jul 80 p 1

[Text] New strikes have broken out in Poland. Since 1 July, when officials of the Polish People's Republic announced an increase in meat prices, generally in 33 large industrial plants workers have organized spontaneous strikes in support of demands for wage hikes.

A spokesman of the Social Self-Defense Committee [KOR] announced in Warsaw that strikes have erupted in three plants in Zyrardow near Warsaw. The REUTER agency in announcing this news has not given the names of the factories in which workers have halted work. Zyrardow is known primarily for its textile industry.

As we reported in yesterday's DZIENNIK, workers throughout nearly the whole country have gained a 10-percent wage hike associated with an increase in meat prices imposed by authorities of the Polish People's Republic. Strikes broke out generally in 33 large industrial enterprises (including the Zyrardow outbreaks).

It is a well-known fact that official trade unions mediated in talks of striking workers with factory managers only in two instances. This is indicative of the complete lack of trust of workers in the regime's unions, which are merely the executors of the wishes of officials of the Polish People's Republic.

National sources of mass communications continue not to report about the strikes. They speak only of "heated discussions" in industrial plants between workers and management.

Authorities of the Polish People's Republic lay stress upon the fact that the conceded wage increases are associated with an increase in productivity. In this way, they do not run counter to the wage freeze caused by the difficult economic situation of the country.

### Lublin Railroad Workers Strike

London DZIENNIK POLSKI in Polish 18 Jul 80 p 1

[Text] Railroad workers at the Lublin railway station went on strike yesterday. They demand wage increases associated with an increase in meat prices. In response to the questions of foreign journalists in Warsaw, government spokesman Miroslaw Wojciechowski confirmed this news, adding that the strikers were primarily machinists.

Wojciechowski was unable to confirm reports that they had demanded a pay raise of 2,000 zloty per month.

## Strikes in Lublin Spread

London DZIENNIK POLSKI in Polish 19 Jul 80 p 2

[Text] The wave of strikes in Lublin is taking on menacing proportions. Besides railroad workers, whose strike we reported on yesterday, workers stopped work in 16 factories. Edward Gierek went to Lublin.

Army trucks are transporting such basic food articles as bread and milk to the city. A KRS/WR spokesman has declared that work has completely come to a halt in 16 Lublin factories. The large railroad network is paralyzed; railroad workers have blocked all the more important routes. Workers demand a 10-percent wage hike in conjunction with an increase in the price of meat, which spurred a wave of spontaneous strikes throughout Poland.

The KOR spokesman declared that the city transport system in Lublin, which has nearly 300,000 inhabitants, is at a standstill. Bakery workers, dairy workers and city electrical workers are also on strike. The railroad workers strike has cut off the main line leading to the Soviet Union.

Official government spokesman Miroslaw Wojciechowski confirmed only that railroad machinists were out on strike, as we reported yesterday. He made no mention of other strikes. On the other hand, two local newspapers reported on the strikes and came out with a call to workers to preserve discipline.

PZPR leader Gierek delivered an address Thursday at a youth conference in Chelmo, in which he declared "that people who demonstrate a lack of discipline expose the nation to great danger." This was a clear allusion to the present wave of strikes. On Friday, Gierek went to Lublin.

It appears that the strikes in Lublin are the most serious of all the strikes that have occurred to date. Until now authorities have tried to hide the ferment among workers from society. The statement of Wojciechowski on the subject of the railroad workers' strike in Lublin was the first official statement on this subject. Likewise for the first time the local press was forced to treat the issue of the strikes.

## Strikes Continue, Appeals

London DZIENNIK POLSKI in Polish 21 Jul 80 p 1

[Text] Workers of the Lublin railroad network provisionally halted their strike, having received partial compliance with their demands of a pay raise and the promise of the consideration of their other demands. The 4-day strike also came to a halt in other enterprises in Lublin, Krasnik and Chelm. The situation in Lublin, as we reported Saturday, was very serious. All important rail lines were blocked by immobile locomotives, and among the lines which were cut off was the line leading to the Soviet Union.



All communication was at a standstill, and bread and milk, which were transported by army trucks, were in short supply. Workers demanded wage hikes in conjunction with an increase in the price of meat, which spurred unrest throughout the country.

#### Appeal of the Politburo

On Friday afternoon the PZPR Politburo sent out an appeal to workers, summoning them to return to work and promising to call together a special government committee to study their demands. At the head of the committee is Mieczyslaw Jajlowski, deputy premier and Politburo member. He is also a delegate to the Diet of the Lublin District. The appeal was published only in the local press and announced by the local radio station. Posters summarizing the appeal were also hung throughout the city.

#### "Alarming Our Neighbors"

The spokesman of the INTERPRESS press agency, Mironslaw Wojciechowski, declared at an impromptu press conference for foreign journalists in Warsaw that the Politburo appealed to the "patriotism and sense of responsibility of the workers." Wojciechowski added that "the situation and atmosphere in Lublin has created conditions favorable for the enemies of Poland for the breeding of provocation." However, he denied that the authorities had given an ultimatum to workers. Wojciechowski also said that "the strikes may cause alarm among our friends." This was clearly an allusion to the fact that Moscow may be displeased with the development of the situation in Poland.

#### Return to Work

A KES/KOR spokesman stated in Warsaw that workers were promised a raise of 500 to 600 zloty per month. Workers were demanding 1,200 zloty. The spokesman also said that a KOR representative, who informed his colleagues in Warsaw by telephone of the development of the situation, was arrested in Lublin. It is rumored that police are looking for one of the members of the local KOR section.

#### New Strikes

According to the latest reports, strikes have broken out in Krasnik and Cheim. It should be emphasized that last week Edward Gierek, PZPR leader, was staying in Cheim. The information which we published on Saturday according to Western press agencies that Gierek went to Lublin is apparently inaccurate. Most likely Gierek returned to Warsaw and called a meeting of the Politburo, which sent out an appeal to Lublin workers.

#### Unrest among Printers

On Thursday of last week, printers of the party printing plants of the Prasa Worker's Cooperative Publishing House in Warsaw made demands for

wage increases, threatening a strike. The management yielded, granting an increase of 650 to 1,000 zloty. On Friday, a brief warning strike broke out in the Warsaw Dom Słowa Polakiego printing establishments. Printers received a wage increase, but we have no information concerning the amount of the increase.

#### Regime's Press Breaks Its Silence

The wave of strikes has gained such strength that the central regime press has been forced to break its silence on this subject. The PZPR organ, Warsaw's TRYBUNA LUDU, made mention of the strikes for the first time. TRYBUNA LUDU writes: "The strikes are the road to nowhere." The daily appeals to workers to conduct talks on the subject of their demands without work stoppages. The party organ, however, has not given any details of the strikes and has made no mention of the seriousness of the situation in Lublin. Nor has it announced the appeal of the Politburo.

Of course, the Soviet press and that of satellite countries has maintained complete silence on the subject of the ferment among workers in Poland.

#### Government Officials Address Workers

London DZIENNIK POLSKI in Polish 21 Jul 80 p 4

[Text] Mass workers' strikes, which have lasted for 2 weeks, are a social and political phenomenon hitherto not encountered in this form and on such a scale either in Poland or in any nation of the Soviet bloc. They are characterized by the resoluteness of purpose of workers and well thought-out action in factories. The strikes have gained such force that even adherents of severe tactics in the Gierek camp do not dare consider repressive measures, and Gierek has hastened to seek a settlement and compromises with workers.

It is characteristic that strikes are erupting spontaneously at various places in the country and that tens of thousands of workers are taking part in them. It is estimated that over 200,000 workers have gone out on strike. In reality, the number has surely been much greater, since news of these activities is delayed, while at the same time protest actions of cadres begin again and again in new factories.

Workers act discreetly and efficiently, independent of official trade unions. They select their own delegations and these conduct negotiations with management or even with higher authorities. One of the preliminary conditions of negotiations is the demand for a guarantee in writing, that after the strike is concluded its leaders will not be called to task and will meet with no harassment. In some factories, the chosen delegates take along representatives of the official unions into talks with management, treating this as a guarantee of their own safety. Another protective system is sometimes adopted. Newly chosen delegates take part in successive deliberations. In this way, the more representatives of the work force that negotiate

with management, the more difficult it will be later to harass so many workers. This has been arrived at as a result of the experiences of December, 1970, when despite the promises of Gierk at the Szczecin shipyard, repressive measures were taken against the leaders of the strike.

#### Secret Briefing of Managers

Gierk repeated his mistake of June, 1976 when he again ordered a surprise price increase, to which workers in Radom and Ursus immediately reacted. Subterfuges did not help to release the party chief from responsibility for his decision then, and they do not help now, since it is known that he has the final say in such matters. Furthermore, this was confirmed in later publications after June. Now in July the Politburo with Gierk at its head has been sent into a panic in the face of a massive workers' protest.

Fearing that the wave of protests would overcome the whole country, the Central Committee called a secret meeting for Friday, 11 July, to which the managers of the largest factories were hastily transported by plane and helicopter. The meeting included the managers of those plants in which strikes were ongoing as well as those of plants in which strikes could erupt. They were ordered to behave in a conciliatory manner, to carry on negotiations with workers, and it was indicated that they should go along with the necessary concessions. They were threatened with personal responsibility for any sharp clashes, outbreaks of violence or extended strikes occurring in their factories.

#### Minister Had to Come In

Factories with several tens of thousands of workers have struck--or are still on strike--but factories having only several thousand workers have likewise carried out this same action. Everywhere their basic demands were the same, but in some factories even further demands, more specific ones, were made. Striking factory workers in a canned meat plant in Zamosc also demanded that the government of Babluch should not send canned meat to Moscow for the Olympics, but rather should serve the needs of the Polish market.

In order to appease a large striking cadre of the Transportation Equipment Plants in Swidnik, Machine Industry Minister Kopec had to come in at their demand. Following a mass meeting, the chosen delegation conducted talks with Kopec and the plant management. Several demands were announced at the meeting. In the talks with the minister and the management, a wage increase was guaranteed for the workers and changes in the pay schedule were made for white-collar workers.

#### Opposition to the Privileges of the UB

Deputy Minister Krzak went from Warsaw to several tens of thousands of striking workers of the truck plant in Lublin. The workers demanded the removal of the head plant manager, a wage hike, the same benefits for workers' families as officials of the Citizens' Militia are entitled to

and bringing up the level of the factory cafeteria to the level of the cafeterias in use by the Security Service [UB] and the Citizens' Militia. They also demanded an official guarantee from state authorities that meat from Poland would not be transported to Russia. The recommendations regarding wage increases deserve attention, since they are characterized by a sense of justice. Workers demanded that those earning up to 2,000 zloty monthly should receive a raise of 1,000 zloty. For those earning up to 7,000 zloty, the increase should be 500 zloty, and those earning even higher salaries should receive 300 additional zloty per month. In the light of their lack of trust in the management, workers demanded a guarantee from the ministry that no one would be punished for the strike. They received this guarantee.

We will turn again to the issue of the strike which, according to incomplete information, has encompassed approximately 40 factories.

#### Independent Trade Unions Demanded

London DZIENNIK POLSKI in Polish 22 Jul 80 p 1

[Text] Spontaneous strikes have broken out throughout Poland, with workers stopping work in Stalowa Wola, among other places. The strikes in Krasnik and Chelm continue.

As we reported yesterday, the strikes in Lublin have been called off, but railroad workers announced that their return to work is "temporary." This means that a new strike is not excluded. They have been granted wage hikes of 400 to 600 zloty monthly, i.e., less than half of what they demanded.

#### Other Demands

Authorities, however, have not responded to two other important demands: the complete freedom of the strikers and the organization of independent trade unions. The present so-called trade unions are the organ of the communist party and the government and in bargaining side with the authorities as a rule.

A KSS/KOR spokesman in Warsaw has announced that workers have struck at the steel mill in Stalowa Wola. A strike in the ball bearing factory in Krasnik (50 kilometers southwest of Lublin) continues as does that of bus workers in Chelm. Talks between workers and management of these enterprises were slated for yesterday.

#### Bargaining with Authorities

It is beyond the shadow of a doubt that officials of the Polish People's Republic, fearing a recurrence of the violent workers' demonstrations of 1976, also spurred by an increase in the price of meat, are conceding

to demands. The situation in Lublin, where railroad workers have blocked the rail line leading to the Soviet Union, appears to be the most threatening.

#### Western Press on Events in Poland

The Western Press has devoted much space to the strikes in Poland.

The London DAILY TELEGRAPH devoted an introductory article to this issue. The article notes that the events in Poland bring to mind the events preceding the "Prague Spring" in Czechoslovakia. They led to Soviet armed intervention and the pronouncement of the "Brezhnev doctrine" which proclaims that the defense of "socialism" in a "socialist state" is appropriate action.

"As far as Poland is concerned," the DAILY TELEGRAPH writes, "the matter is different from that in Czechoslovakia in various ways. Poland is the largest and most important state in the Soviet bloc in Eastern Europe. It is very steadfast people. There is a well-educated new generation. Two spheres--the church and agriculture--are independent. There is also a class of industrial workers, which undoubtedly tends toward social and political reforms, which Moscow could not destroy in Czechoslovakia."

#### Battle over Trade Unions

The DAILY TELEGRAPH emphasizes that in the present strikes the issue is not only protests against higher food prices. It is an action whose purpose is to achieve truly free trade unions with the political and social consequences that follow from them. The London daily calls to mind that when unrest occurred three times in the past among workers, changes were made in leadership or in governmental policy. This time the changes may be more far-reaching, asserts the DAILY TELEGRAPH.

#### Strike at State-Run Enterprise

London DZIENNIK POLSKI in Polish 23 Jul 80 p 1

[Text] Spontaneous strikes continue to break out in Poland. In Warsaw drivers of the Kisazka, Wiedza, Ruch party news distribution enterprise stopped work for 6 hours. For this reason the party newspapers TRYBUNA LUDU and ZYCIE WARSZAWY went on sale after a long delay. The strike continues at the steel mill in Stalowa Wola.

In Lublin, where the situation looked most threatening, quiet rules. Authorities were particularly anxious to see the end of strikes of factory workers and railroad workers, since yesterday marked the 36th anniversary of the Moscow pronouncement of the manifesto of the so-called Polish Committee of National Liberation [PKWN]. A government gala takes place yearly on this occasion.

Strikes in city communications plants in Chelm and in the ball bearing factory in Kramnik have terminated. The strike continues at the steel mill in Stalowa



Wola and apparently at the tanning plants in Lubartow. In Stalowa Wola, intensive talks between workers and management of the steel mill are being conducted. In factories in Radom and Torun, workers gained wage increases, but it is not known whether this was the result of a strike or whether a strike was threatened.

A 6-hour strike at the Ksiazka, Wiedza, Ruch party news distribution enterprise was humiliating to the regime. It caused a delay in the sale of the PZPR organ TRYBUNA LUDU and the daily ZYCIE WARSZAWY. Drivers received a pay raise of 1,000 zloty per month.

#### Striking Workers' Successes

London DZIENNIK POLSKI in Polish 24 Jul 80 p 1

[Text] Since the time of the announcement by the government of the Polish People's Republic on 1 June [as published] of an increase in meat prices strikes have erupted in 68 industrial plants. A strike continues at the steel mill in Stalowa Wola. Quiet reigns throughout the country in general, however.

A KSS/KOR spokesman in Warsaw has declared that nearly all strikers have received a pay raise.

The most serious situation developed in Lublin, where railroad workers and workers in 17 factories stopped work. At present the situation there is quiet.

One of the leaders of the railroad strike, Zbigniew Szpakowski, has stated that strikers completely ignored the official trade union. Talks with the railroad management were conducted by a specially appointed committee. Szpakowski stated that railroad workers were shocked by their rapid success. "Our greatest achievement," Szpakowski said, "was not that we gained a wage increase, but that the Lublin working class has managed to carry out such a protest action.... We organized the strike without the official trade union, which does not represent our interests."

July 22 was a free day from work as a regime state holiday. In Warsaw an army parade took place. In his remarks for the occasion premier Babiuch made no mention of the strikes.

#### KOR List of Strikes

London DZIENNIK POLSKI in Polish 24 Jul 80 pp 1, 4

[Text] It is not yet possible to determine exactly the number of factories in which workers' strikes have occurred, or still occur, in which workers are demanding wage hikes and improvements in living conditions. Regime authorities purposely attempt to deny information concerning the locations of the strikes.

The only source of information--for foreign journalists as well--is the Social Self-Defense Committee [KOR], which is in contact with all of Poland. KOR publishes information only about those strikes, however, which it can check out authoritatively. Since this is not easy, undoubtedly the compass of the strikes is greater.

It is known that the 1 July increase in meat prices was not carried out in all voivodships. The party checked announcing the increase where they especially feared workers' reaction, as e.g., in Katowice Voivodship, in Lodz and Poznan. Undoubtedly the party is most fearful of the reaction of miners. In order to provide an orientation of the scale of this workers' protest, we have compiled a temporary--and, to be sure, an incomplete--strike schedule. In large factories often only certain departments went out on strike.

#### Where Strikes Occurred

The first strikes began 2 July in the Ursus Machinery Plants near Warsaw and in Tczew in the POLMO factories which produce automobile parts. Let us continue on to the next strikes.

Warsaw--The Personal Automobile Factory in Zeran, the Roza Luksemburg Radiotechnical Plants, the WARSZAWA steel mill, the WAREL factory of electronic watches, the ZELMET plants in Sluzewiec, the Telephone Equipment Production Plants in Grochow, the Swierczewski Machinery Plants, the MERA Computer Equipment Factory in Blonie (near Warsaw), the POL-KOLOR plants (producing television tubes) in Piesecznie (near Warsaw).

Elblag--The large machinery plants ZAMECH; Grudziada--The Meat Factories; Gdansk--Several departments of the Gdansk shipyard, the ELMOR construction plant of electrical ship equipment.

Mielec--The Transportation Equipment Factory (aviation industry); Skarzysko--Ball bearing plant.

The Rzeszow Construction Works. Ostrzeszow (Kalisz Voivodship). Mechanical Plants. Lezajsk (Lublin Voivodship) Browar.

Zyrardow--The Technical Fabrics Plants, the PONAR plants of machine tool repair, the Linen Fabrics Plants, the STELLA stocking [as published] factory, The Flaxboard Production Plant, the POL-DRES underwear factory, plants of the cotton industry, the SYRENA tanning plants, the POLMOS spirits plants.

Swidnik (Lublin Voivodship)--The Transportation Equipment Plant; Zamosc--The Canned Meats Factory; Krasnik--The ball bearing factory; Chelm--The City Transportation Plants; Lubartow--The Tanning Plants.

## Lublin 'Celebrates' PKWN Gala

The strikes in Lublin began in the truck plant and then spread to the whole city. On 16 July a strike broke out in the Lublin railroad station. Numerous other enterprises then joined in, the names of which follow:

CEFAM (the pharmaceutical supply enterprise), TRANS-BUD (construction transport), the city transportation plants (buses), the poultry factories, the City Automated Bakery, the AGROMET power-repair plant, HERBAPOL, the thermoelectric power station, the No 5 City Flourmill, the city milk plants, the Lublin Industrial Construction Enterprise, automobile repair plants, the Engineering Works Enterprise, the Internal Trade Transport Enterprise, the city sanitation plants.

These 18 striking factories were to be joined by others, including postal workers. An almost universal strike in Lublin broke out several days before the official gala associated with the 36th anniversary of the announcement of the Polish Committee of National Liberation [PKWN], which began its activity in Lublin itself.

### Solidarity of Positions and Demands

Independent of the length of the strikes in particular factories, their mass nature and spontaneity have their own political and social significance. The strike in Lublin demonstrated the solidarity of the working masses and exhibited the power that they represent, as well as their capacity for the voluntary appointment of their own representatives. The strike in Zyrardow, in a city considered by the communists as their stronghold ("red Zyrardow") unmasked the enmity of the working class against the ruling party of the country.

Besides the universal demands of pay increases, other demands were also propounded. At the Lublin Industrial Construction Enterprise demands were made to equalize family benefits for workers with such benefits received by the militia, the security service and the army. The liquidation of commercial stores and the fair dispensation of housing were also demanded. The Lublin thermoelectric power station strike committee also demanded the equalization of family benefits with those paid out to the UB [the Security Service] and the army.

In Zyrardow in addition to wage hikes, workers demanded that representatives of the Supreme Chamber of Control come in to study the management of factories and to reduce excessive administrative bureaucracy. The freedom of the strikers and a guarantee of safety for strike committees and strikers in general were demanded everywhere.

### New Spontaneous Strikes

London DZIENNIK POLSKI in Polish 28 Jul 80 p 1

[Text] Sporadic strikes continue to break out in Poland. Unrest is growing among workers in conjunction with rumors that the Soviets have put pressure

on the Polish People's Republic to fulfill its export obligations toward the USSR more rapidly.

Poland imports 80 percent of its crude oil needs from the Soviets. It pays for this by exporting coal, industrial products, and most importantly--food, including meat. Of course, the details of these transactions are never published. As is known the direct cause of the wave of current strikes was the 1 July increase in meat prices. Meat consumption in Poland at present amounts to over 75 kilograms per person annually and is the highest among countries of the Soviet bloc.

In Poland, rumors are circulating that the lack of meat on the domestic market was caused by its intensive export to the USSR in conjunction with the Moscow Olympics.

According to most recent reports we have received, strikes in a machine tool factory and in a railroad repair shop in Ostrow Wielkopolski near Poznan have lasted 4 days. Workers demand a 20-percent wage hike.

It is rumored that new strikes have also broken out in Chelm. On the other hand, across the river in Zabierzow near Krakow a strike at the glassworks in Lubaczow has terminated. Generally since 1 July strikes have erupted in more than 100 plants. More than 800,000 workers have struck.

The regime press, which does not publish any details on the subject of the strike, publishes articles on the necessity of economic reforms and enjoins workers to discipline.

#### Government-Worker Confrontations

London DZIENNIK POLSKI in Polish 28 Jul 80 p 4

[Text] The mass workers' strikes of July pass into Polish postwar history. They were strikes of the broadest dimensions, of a national scope and were crowned with the realization of a significant portion of the workers' demands. At the same time, they took place without bloodshed and street rioting. They also pass into history because the party and the government subject to it had to yield in the face of the peaceful but resolute attitude of the working masses.

Gierek, forgetful of earlier lessons taught to him and to Gomulka, once again wished to thrust higher prices upon society using surprise tactics. Once again it turned out that the party chief either has persisted in disdaining the mood of society or does not believe in its power and might. The only lesson which the Politburo now remembers from the past has been the capitulation before workers' demand, carried out in secret in order to save face. This method played them false, since all of Poland thanks to Radio Free Europe and other Western broadcasts knew of the course of events and of the meetings and decisions of the capitulating Politburo which were being hidden from society.

We already reported on the secret briefing of managers of large factories in 11 July in the DZIENNIK POLSKI. Under the influence of the general strike in Lublin, the Politburo held its extraordinary meeting in the evening on 18 July. Following this meeting a communique was published which appealed to Lublin workers to terminate the strike and promised a review of their demands by a special state committee, led by Mieczyslaw Jagielski, Politburo member and deputy premier.

#### First a Raise--Then Work

But this resolution was not announced either in the Saturday/Sunday issue of TRYBUNA LUDU or by Radio Warsaw. It appeared in a special Saturday edition of the Lublin party newspaper, SZTANDAR LUDU, and it was summarized on the air by the local Lublin radio station. A hastily printed appeal of Lublin party authorities calling workers to return to work and promising a review of their demands was pasted up on the walls of the city.

Lublin workers, however, placed no faith in these promises and continued to demand concrete raises and a guarantee that strikers would not be punished. They were prepared to settle other demands in the course of negotiations of their committees with authorities.

The government was again forced to yield and through Saturday managers of various factories granted pay raises. Strikers then returned to work warning that they would discuss the other issues directly following the normalization of the situation in Lublin. In this way, workers of the thermoelectric power station received a pay raise of up to 150-200 zloty. City bus and trolley workers returned to work after being granted a pay raise of 500 zloty.

#### Unyielding Railroad Workers

The greatest distrust of the authorities was displayed by railroad workers, who returned to work only on Saturday night after receiving a pay raise of 400-600 zloty. The strike committee announced, however, that the calling off of the strike is conditional and contingent upon the settlement of the railroad workers' other demands. These include an appeal for granting railroad workers the same family benefits as are received by officials of the security service and for immediate new elections to factory councils and trade unions which are controlled by party activists.

Strikes in Chelm, Krasnik and Lubartow halted after the management was obliged to grant pay raises. On Monday in Warsaw, drivers of the Prasa-Ksiazka-Ruch party enterprise began a strike in the morning which lasted 6 hours, seeking a wage increase. As a result of this strike there were no newspapers in the kiosks that morning and the Warsaw populace thought that printers had gone on strike. In reality printers had received a wage hike earlier, and the strike of the news distribution drivers concluded when they were granted a wage increase of 1,000 zloty. In Torun and Radom, strikes were averted and workers were immediately granted a pay raise.



Throughout Poland, workers were persuaded in July of their strength in relation to the party and the government--if they act in solidarity and on a broad national scale. They were also convinced that they themselves have the power to defend their own rights through their own strike committees and delegates. Once again it has become apparent that the regime's trade unions are the tool of the party, carrying out its wishes but not defending the interests of working masses. The organizational committees of "Free Trade Unions" and the independent biweekly ROBOTNIK to a large degree served to awaken the workers' consciousness of this fact.

In the course of the whole striking activity, workers had the support of KOR activists, who supplied them with the necessary counsel and informed public opinion (by means of foreign journalists) of the course of the striking action. The KOR declaration reporting on these events has clearly formulated the most important workers' demands for the future, and has above all recorded the legal guarantee of strikers' rights and a change in the labor code (particularly Article 52, enabling work stoppage for participation in a strike).

#### Szydlak's Loss of Face

The July strikes caused a loss of face for Jan Szydlak, close friend of Gierk and member of the Politburo, who became the regime chief of trade unions in February of this year. It became evident that neither he nor certain other officials of the central union council and appointed chairmen of such unions as the railroad workers and textile industry workers--who have occupied their good positions for 10 years--understand or care to represent workers' interests.

#### Effect of Strikes on Government

London DZIENNIK POLSKI in Polish 29 Jul 80 p 4

[Text] For dozens of years until now, July was a gala month for the regime, celebrating the anniversary of the Polish Committee of National Liberation [PKWN] with the distribution of orders and awards and with praise for the blessings that have accrued for the nation as a result of the Osobka-Morawski and Wasilewski manifesto. After this year's memorable workers' strikes, July passes into the history of the Polish People's Republic as a month recalling the powerful and victorious protest of the working masses against the ruling party that derives its origins from the PKWN.

Reports from Poland assert that more than 70 factories throughout Poland participated in the strikes. Everything points to the fact that there were even more striking factories, but the news of the progress and results of strikes in the provinces has not yet reached Warsaw. In a superbly organized strike of Lublin railroad workers, even party members participated. The strike committee had its headquarters in a railroad car at the Lublin station. The railroad workers exhibited great solidarity.

When several dozen machinists were brought in from Siedlce to activate the locomotives and trains which blocked the tracks, the strike committee asked them whether they wished to play the role of strikebreakers. The machinists returned to Siedlce without faltering. The leader of the strike committee, Zbigniew Szpakowski, emphasized the fact that the uniting of thousands of workers in a joint striking action was of greater significance than the pay raise which was won. It will facilitate the future battle for workers' rights and should already have taught a political lesson to the officials of the Polish People's Republic.

#### Scarecrow of Intervention

Throughout the days of the Lublin strike, party propaganda reached into the junk heap of old threats, drawing out the menace of Soviet intervention. This time it was done in a weaker tone than formerly, but likewise left no impression on the workers. It may be declared without hesitation that there was not the shadow of a possibility of such intervention. Within the Polish situation, the danger of this was clearly imminent only once. This was in November of 1956, when Soviet tanks from Legnica and the east moved on Warsaw. The Russians were unusually quickly persuaded that not only the working masses but the army as well would resist them. This was evident from the determination of the navy, the air force and land armies, which took defense positions near Warsaw. Krushchev understood this, and his successors remembered the lesson.

During the events of December, 1970 in the coastal area, Gomulka entreated Brezhnev for active assistance. Brezhnev refused, although he had a pretext, since Soviet ships stood in the ports and shipyards of Gdansk and Szczecin. No one in the Warsaw Politburo considered the possibility of help from Kremlin comrades in June, 1976. Now, after Afghanistan and on the eve of the Olympics the allusions to Soviet intervention carried the weight of a child's scarecrow. And that is how they were regarded.

#### Compulsory and On-the-Spot Concessions

The possibilities of a maneuver by Gierek against the strikers were minimal and were reduced to the extent that more and more factories became involved in the strike. After December, 1970, in order to eliminate the possibility of a workers' uprising, the Politburo selected the 150 largest factories. These were under the constant supervision of the Central Committee, care was taken to guarantee them the best working conditions, good wages and the privileged supplying of stores and factory cafeterias. And now in July it has become evident that many of these favored factories have constituted a strong base supporting the whole strike front.

Every use of force could have turned out to be a spark thrown into a powder keg. At least some people from the party leadership knew--and know--about the constantly growing moods of unrest in society and understand the danger of a spontaneous uprising, the consequences of which may be incalculable.

Breaking the power of the strikes would have resounded with immediate echoes abroad and consequentially would have ruled out Poland's current broad endeavors and loans from abroad, which are for Gierak an indispensable life belt in the light of the deepening national crisis.

Gierak also had to consider the fact that one extraordinarily important voice could speak out against the use of force and violence against the workers. A voice from the Vatican.

#### Significance of the Opposition

There was still another factor which undoubtedly had an effect on the compulsory discretion of Gierak and the Politburo. I have in mind the solidifying democratic opposition in Poland after 4 years of constant activity. It has effectively managed to protest against many illegalities of the regime, it is capable of defending people against police violence, and above all, it has aroused in society faith in the need for and effectiveness of fighting for its rights. The voice of this opposition already has its significance and importance according to the opinion of foreigners as well, which is attested to by the fact that the attention paid to the position of society in Poland and the role of the KSS/KOR is more and more universal.

#### Concern over Appearances

The use of force against the strikers would have had to lead irrevocably--either sooner or later--to the fall of Gierak. In this situation the immediate concessions of the party and the government, which are quite significant if not total, were a compelling necessity. Gierak introduced them in a manner calculated to save his own prestige. He, who so incessantly travels throughout the country, receives delegations and often makes speeches, in the final phase of the strikes did not appear in the arena of events.

Suddenly he hid behind a screen of the "collectivity" of leadership. Inspired "leaks" even began to exude from the party headquarters, that Gierak was devoting all his attention and energy to foreign affairs and had less time to devote to domestic affairs in Poland. Such are the manipulations of the "political cosmetics" of the party chief to save face.

#### Financial Effects

London DZIENNIK POLSKI in Polish 30 Jul 80 p 1.

[Text] The Warsaw regime publicly admitted for the first time that it is having great difficulties acquiring credit to pay for indispensable deliveries from abroad.

The admission came in the form of a radio interview with the deputy minister of foreign trade, Stanislaw Dlugosz. Within 4 weeks after the increase in

meat prices he admitted that difficulties have arisen in acquiring "the essential financial facilitation necessary for maintaining imports at the planned level."

Diugosz did everything in his power to lay the blame on the breakdown of East-West political relations, but the opinion of Western governments and Western bankers is different. The bankers in particular hold that industry in the Polish People's Republic is unproductive and that the economic situation in the Polish People's Republic does not create a sufficient guarantee of ability to pay.

Western journalists maintain that despite the cancellation of state subsidies for meat, among other things, the regime is not capable of normally servicing its Western debts, which some already estimate at \$20 billion.

London DAILY TELEGRAPH reporter David Sheara writes that last year the national income of the Polish People's Republic dropped by more than 2 percent, and this year's floods inundated approximately 250 million acres of land, which augurs for very poor harvests. In addition to the wage increases granted by the regime, which are to compensate for the increase in meat prices, the blessings of tightening one's belt anticipated for the national economy have been canceled. According to Western analysts, the wage hikes amount to approximately \$160 million.

### Consequences of Strikes

London DZIENNIK POLSKI in Polish 1 Aug 80 p 4

[Text] What will be the consequences of the July strikes in the domestic life of the country, if Gierk and the Politburo have understood their deeper significance and have not only considered them to be a struggle for wage increases and improved living conditions? Twice already Gierk in his administration has either deceived workers by his promises (at a mass meeting in the Szczecin shipyard in January, 1971) or has broken their protest by force (June 1976).

This time, however, the party will not be able to buy its way out of making basic decisions. At least 300,000 strikers in over 100 factories is no trifling matter. The passivity and silence of the authorities may provoke a return wave of significantly stronger protests. The meeting of the Politburo on 23 July seems to indicate, however, that the party has comprehended at least a significant part of the lesson of July. This is proved by the fact that the manner in which the pay raises in all factories should be realized was discussed at the meeting.

The reasoning of the Politburo is simple. If we do not give some sort of raise to factories which did not strike, work cadres in these factories will begin a strike. A second argument in favor of general raises is a

certain propagandistic outlook. Let the naive workers understand that the party itself remembers them and that it is not necessary to strike to get a raise. What is not known, however, is whether those who did not strike will receive a lower wage hike than the strikers.

#### Let Brezhnev Pay

There is no doubt that the workers' masses will understand that pay raises are only due those workers who went out on strike to struggle for a general improvement in the conditions of existence in the work world. The effectiveness of the July strikes will sink into the consciousness of the masses. The party must take into consideration the fact that in the future a similar conflict with workers may take on much greater proportions in terms of numbers and strength.

Of course, the money must be found for the pay raises. This will certainly not happen without increasing imports to cover the needs of the domestic market. The loans which the regime is presently soliciting may not be sufficient. But there is still another, richer source of assistance. As we know, Gierek went for his annual Crimean retreat to Brezhnev. If he is not submissive and cringing, he will be able to make use of the argument of the Polish strikes to acquire not only Soviet credits but above all to achieve a reduction in those services for Russia, which encumber the Polish economy more and more.

#### Workers' Demands

One of the most urgent domestic reactions of authorities to the strikes should be the fundamental reorganization of the bureaucratization of trade unions and the reform of the so-called "workers' self-government" in factories, which has nothing in common with actual self-government. The battle for opening authentic free trade unions must be carried further. The best example of the indifference of the official trade unions to recent events is the fact that their own union publication, GLOS PRACY, paid no attention to the strikes for 3 weeks in July and took no interest in the situation in factories.

It is impossible to return to everyday order over the demand of 30,000 workers in Stalowa Wola who insist that their union dues be returned with a clear motivation: "The unions have done nothing for us, they do not defend our interests and for this reason we do not want these unions and demand the return of our dues." Lublin railroad workers during the strike demanded that new, authentic elections be held in union channels.

#### Careers of Mannequins

The political sclerosis of union officials is hereditary. Kruczek did nothing for the workers, and the new union chief, Politburo member Szydlak, is more interested in outfitting a luxury villa for his daughter than in workers' affairs. Such secretaries of the Central Council of Trade Unions



as Mieczyslaw Brad or Irena Sroczynska have held their positions for at least 10 years and know that their sinecures depend on the will of the party, and not on whether they act in the interest of workers.

#### There Were No Strikes

Propaganda and the party press received a provocative directive. Nowhere has it been written or stated that there were strikes in July. How could events take place in the Polish People's Republic that are in evidence only in "capitalist countries?" Thus what is written about are work stoppages, standstills in factories, discussions of workers with management--but writing about strikes is forbidden! The editor-in-chief of the servile YZCIE WARSZAWY generally minimizes and underestimates the July occurrences. He says that "work stoppages" occurred in former years and wants to treat the strikes of a quarter of a million mass of workers that lasted for many days in the same way. He considers the reaction to the sudden increase in meat prices as remarkably excessive. Apparently "hardheaded" Politburo member Lukaszewicz gave a directive to his subordinates to officially minimize the workers' position and their largest strike in postwar Poland.

#### Strikes in Tri-City Region

London DZIENNIK POLSKI in Polish 1 Aug 80 p 1

[Text] Trolley drivers in Tri-City (Gdansk, Gdynia and Sopot) struck and received a 10-percent pay raise. A strike also broke out in the farm machinery factory in Wroclaw.

As announced by a KSS/KOR spokesman in Warsaw, the strike in the coastal area lasted only a half-hour. On the other hand, workers in the farm machinery factory in Wroclaw stopped work for 12 hours. They also received a 10-percent pay hike.

Independent workers' committees arose in Wroclaw and Poznan to conduct talks with factory managers. This is synonymous with the further downfall of the regime's trade unions, which in bargaining represent the position of the authorities and not the workers.

Rumors have gained strength in Poland that the lack of meat on the market has been caused mainly by its excessive export to the Soviets for the Moscow Olympic games. Western correspondents in Warsaw emphasize that regardless of whether these rumors are accurate, they attest to the fact that the Poles cannot tolerate their "Soviet big brother."

#### New Strikes

London DZIENNIK POLSKI in Polish 7 Aug 80 p 1

[Text] New strikes have erupted in Poland. Workers are demanding a pay increase.

According to the report of a KSS/KOR spokesman in Warsaw workers stopped work in an automobile parts factory and a chemical fertilizer plant in Tarnow.

In Poznan, workers of two factories and trolley and bus drivers threatened to strike. They received a wage hike without stopping work. Also in Poznan operators of construction cranes struck for a half-day. They received a pay increase.

Crane operators in the port of Gdansk returned to work after receiving a pay increase.

#### **'ROBOTNIK' Editor Arrested**

London DZIENNIK POLSKI in Polish 8 Aug 80 p 1

[Text] In Warsaw 34 year-old Jan Lipinski, editor of the periodical ROBOTNIK, which does not reach the pen of the censor, has been arrested. New strikes have broken out in Poland.

Several dozen agents of the UB [the Security Service] in plain clothes forced their way into Lipinski's apartment, arresting him and two of his co-workers. After a hearing, only Lipinski was held. Security service officials had been informed that a delegation of workers from the Ursus tractor plant near Warsaw was to come to Lipinski. The present wave of strikes resulting from an increase in meat prices began in the Ursus plant.

The news has reached us from Poland that the strike committees set up in various factories did not cease their activities even after the strike concluded. They have assumed the character of independent trade unions. In Lublin railroad workers have attempted to bring their own people into the official trade union, which is now totally subject to the authorities.

Meanwhile brief strikes have broken out in a chemical fertilizer plant in Tarnow and a textile factory in Kalisz (7,000 workers). In Poznan, workers in a ball bearings factory received a pay raise by only threatening to walk off their jobs.

#### **Spread to Swidnik, Lodz, Kalisz**

London DZIENNIK POLSKI in Polish 9 Aug 80 p 2

[Text] For the second time in a month, 20,000 workers have struck in a helicopter factory in Swidnik. A strike has also erupted in a textile factory in Lodz.

A KSS/KOR spokesman has announced in Warsaw that workers of a large helicopter factory in Swidnik (southeast Poland) walked off their jobs for the second time, when the management did not keep its promise of a 15-percent pay increase and refused to compensate workers for a 4-day

strike in July. The spokesman emphasized that the management yielded immediately and accepted all of the workers' demand including compensation for the 4 strike days.

On Tuesday, 10,000 workers in one of the largest textile factories in Lodz went out on strike. This is the first news of the spread of the strikes to this large center of the textile industry. As we have already reported, the direct cause of the strikes in Poland was the announcement on 1 July by the government of the Polish People's Republic of a substantial increase in the price of meat. Local authorities in Lodz, however, did not put this price increase into effect. It is evident from this that the workers who walked off their jobs in the textile factory have joined in the general national action for improving the lot of the working class.

A strike of 7,000 workers from the textile plants in Kalisz, about which we reported yesterday, has terminated. The management complied with workers' demands.

Until the present time there have been no reports of strikes in Slask. Miners are the most well-paid workers in Poland. Moreover, officials of the Polish People's Republic, fearing work stoppages in coal mines because of the valuable export of this fuel, take care over the plentiful supplying of grocery stores in Slask.

It is not yet known whether a strike in a ball bearing plant in Tarnow has terminated.

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MODERNIZATION OF LINER FLEET REGARDED AS PRIORITY

Gdansk DZIENNIK BALTYCKI in Polish 26 Jun 80 p 3

[Article by S. Czerska: "On the Modernization of the Liner Fleet"]

[Text] One of the first topics taken up during the present Sejm's tenure by the Commission for Maritime Economy and Maritime Transport Services has been the issue of the modernization of the Polish liner fleet which had assumed the prime position in the pre-election postulates of the coastal areas.

"Our commission pronounces itself unambiguously in favor of the pressing need of this modernization and treats it as a priority task in the overall field of maritime economy issues" says Prof Dr hab Tadeusz Lodykowski, chairman of the Sejm commission.

It is not by chance that a matter of such great importance is found in the workshop of the newly elected deputies only 2 months after the start of their work. Signalized in the guidelines for the Eighth PZPR Congress and confirmed in the congress discussions, this is a substantial component of issues of basic significance for the further development of the Polish merchant fleet, its economic effectiveness and the role it plays in the promotion of our foreign trade.

The dynamic increase in tramp tonnage which occurred in the last decade assured the growth of Polish servicing of liquid and bulk commodities (crude oil, grains, coal, ores etc.) found in Polish foreign trade transactions. The fleet assigned to the transport of general cargo and employed on the regular maritime transport lines found itself in a worse position. The tonnage increase, which in this period came to about 470,000 DWT [deadweight tons], did not even in part keep up with requirements. The plans and programs linked with the development of this fleet were not realized. In 1976-1980 the PLO [Polish Ocean Lines] were to receive 44 vessels from Polish shipyards on the basis of interministerial agreements. In actuality,

this number declined to 16 units, of which the last one--the semicontainer ship "General Kleberg"--will enter into service in the current year, and two passenger ferries fell to the newly founded shipowners, the PZB [Polish Baltic Navigation Company]. In this context, there occurred various and even dramatic situations. The most recent example of this is the fate of the last ship of a series of four semicontainers from Szczecin which was realized with "delay": the shipyard went into arbitration to have the contract for the delivery of this ship--which was covered by the contract--annulled on the basis that it did not figure in the plan tasks transmitted to it by the ZPO [Shipbuilding Industry Union].

In result of this, the volume of freight transported by the Polish liner fleet fell 10 percent in the space of the last 5 years, and the servicing of general cargo loads of our foreign trade declined by one-fifth. The losses incurred by the national economy on account of this are evident. Testimony to this is the fact that for transport in foreign vessels (and we had to make use of these) we must pay on the average about \$100 per ton of general cargo--and this often in the form of cash payments. Beyond this, the well-known slogan "trade follows the flag" still retains actuality--a slogan which points out the important role of the fleet in carrying goods to their foreign buyers and its influence on the development of export-favoring tendencies in our economy. Moreover, transport services in the form of the carriage of loads of foreign customers (transit freight, freight transported between foreign ports, and the like) constitute activity of a purely export type, apart from safeguarding the balance of payments. Yet, the more profitable loads have begun to move away to the competition with specialized liner tonnage which our fleet does not possess.

The fleet has aged to a significant degree. The average age of the ships of the Polish liner fleet fluctuates in the 13-14 year range, whereas for those under the Swedish or Norwegian flag, for instance, it amounts to 7-8 years. Vessels of the old type constitute about 85 percent of our fleet. At the same time the world economic situation forces shipowners to employ modern transport technology, to replace conventional ships by specialized units, such as container ships, "roll-on-roll-off" vessels, barge ships and others. Investment, operation and maintenance costs of ships are rising. The transloading conditions in the majority of the world's ports are deteriorating. The movement of freight rates is less than that of the rising prices. The way out for shipowners engaged in general cargo transport--the most costly type of freight--is above all the operation of tonnage of multiply increased carrying capacity.

The size of Polish specialized tonnage in liner transport is about half the average size in the world fleets. The lack of new deliveries threatens the PLO with the necessity of suspending operations on some regular lines. Operating difficulties occur; some world ports apply restrictions or refuse the servicing of vessels whose age exceeds 15 years. Let us add that by the end of the current year the PLO will possess 33 units which have been in operation more than 20 years and hence in general are ready for scrapping.



The tonnage requirements for the years 1981-1985 of the Gdynia liner operator have been determined at 56 vessels with a combined tonnage of 550,000 DWT. The program prepared by the PLO and presented on behalf of the ministry at the session of the Sejm Commission for Maritime Economy and Maritime Transport Services has gained the positive opinion of the commission together with the demand for its implementation. It will secure for the enterprise the maintenance of service on the existing PLO lines, the retirement from operation of obsolete vessels and the indispensable change in the structure of its tonnage.

The first step in the direction toward the reconstruction of the PLO fleet was the signing last year of two contracts for the construction of eight modern vessels in 1981-1982: for four ships of the con-ro (container roll-on-roll-off) type and a capacity of 22,000 tons each with France, and for four ro-ro type ships (at 21,000 DWT) with Spain. We all know, however, that it will not be possible to cover the entire remaining tonnage by means of deliveries from abroad. During a recent meeting with journalists, the deputy minister of foreign trade and maritime economy, Tadeusz Zylkowski, in stressing the necessity to modernize the fleet, indicated three sources for supplying it with new tonnage: the Polish shipbuilding industry as the fundamental base, imports to provide supplementary deliveries, and other economically justified solutions which would permit obtaining new tonnage from foreign shipyards without imposing a burden on the national balance of payments, such as, e.g., the creation of foreign joint companies.

However, until now the Ministry of Heavy and Agricultural Machine Industry, which was presented with the types and number of ships expected from domestic deliveries, has not determined its share for the coming five-year period.

--The Polish shipbuilding industry should treat the needs of the Polish shipowners with the attention which they deserve, and hence must take them into account in its development program, stated the deputy minister of the ministry under whose control falls both all of Polish exports and imports and the Polish sea transport services.

--Deliveries to Polish customers from domestic shipyards must be increased in comparison with what took place during the preceding period, according to the opinion of the Sejm deputies.

--Our industry is technically capable of producing every ship which we require. We, in turn, are in a position to pay for each one of them in terms of foreign exchange in the course of 4 to 5 years, and for some of them even faster--e.g., for semicontainer ships in 3.5 years. Our calculations indicate that this is more beneficial for the national economy than sales to foreign purchasers on a credit basis--thus goes the argument of the ocean transport people of the PLO.

And these are not the only arguments speaking for the provision of ships from Polish shipyards. The technical director of the PLO, Ryszard Ulanowski,

MA (engineering), and the investments chief, Piotr Dzida, MA (engineering), stressed in a conversation on this topic among other things the question of prices: ships purchased abroad are more expensive since the credits require the payment of high interest rates. Nor should the issue of outfitting be overlooked. Units built in Polish shipyards are almost all outfitted with equipment of Polish production. This assures a system of repair servicing (spare parts and the like) on a zloty basis for the 20-year period of their operation.

The issue in its entirety must be considered at two levels, said Prof Dr hab T. Lodykowski. The development of exports of the shipbuilding industry is a strategic goal, and so is the construction of ships for Polish use. This requires an expansion of shipyard capacity by means of the completion of the modernization work already begun, a rational increase of employment, and the undertaking of new long-term investment activities. However, before we have achieved this development of shipbuilding capacity we must raise the share of the tonnage supplied for Polish use by devoting to this a part of the production capacity of the shipyards for which there is no coverage in the export contracts. A full cost-effectiveness analysis points irrefutably to superior economic effectiveness if ships are built for the country, for operation by ourselves.

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## ROMANIA

### LACK OF SPARE PARTS DELAYS EQUIPMENT REPAIRS

Bucharest REVISTA ECONOMICA in Romanian No 30, 25 Jul 80 pp 8-9

[Article by Aureliu Ionescu and Gheorghe Paun of the Institute of Industrial Economy: "Repair of Fixed Assets Under Optimum Conditions"]

[Text] The analysis of the rate of efficiency recorded in the use of fixed assets shows the special significance of machinery and equipment proper maintenance and repair in obtaining certain supplementary physical production and in reducing the country's efforts to build new production facilities in these fields of activity. Furthermore, research into the causes for the reduced level of machine-tool use indices in some enterprises shows that between five and eight percent of the maximum available work time is lost (in some cases, even more) because of accidental interruptions in the operation of machinery and equipment, brought about by inappropriate maintenance, as well as exceeding the standard time allotted for capital repairs.

In this context, in order to avoid "rush" work periods at the end of a timeframe, when fixed assets are heavily used to recoup losses generated by equipment down-time, and in view of reducing the need to provide additional equipment and machinery, an increase in concern appears necessary in order to provide spare parts on time, to use production facilities under optimum conditions and to make certain quality repairs within the planned timeframes for this type of work.

#### Spare Parts - Between the Demand and Achievements

Exceeding the timeframe for capital repairs work is principally caused in numerous economic units (as was found during an analysis at the "Autobuzul" Enterprise in Bucharest) by the lack of normal stock levels of spare parts. The technological files for capital repairs made at this enterprise show that of the total number of hours spent in carrying out these repairs, approximately 22 to 45 percent of the time was used in making spare parts. The fact that nearly in all of the capital repairs cases this much time is spent doing this stems from the failure of the equipment production enterprises to deliver contracted spare parts on-time,

creating a shortage in production capability. Thus, for example, although the "Autobuzul" Enterprise ordered spare parts in 1979 for its own equipment, parts worth 2.1 million lei, the suppliers (IMUAB, "Progresul" in Braila, "Unio" in Satu Mare and so forth) accepted contracts for only 1.3 million lei, while at the same time honoring less than half of the contracted value. As a result, the "Autobuzul" Enterprise was forced to produce, in its own fashion, those spare parts that the specialized equipment production units would have produce in series, parts of superior quality and at lower costs.

It should be noted, at the same time, that the equipment supplier units accepted contracts for only approximately 60 percent of the necessary amount of spare parts requested by the "Autobuzul" Enterprise also because of the fact that the list of spare parts to be made by the equipment production units is, in our opinion, too limited. Thus, some high use items ordered as spare parts are not accepted by the production enterprises as items in their delivery contracts. For example, the guide shaft for the 3,150 kg force stamping press, an item produced at the "Progresul" Enterprise in Braila, is not listed in the spare parts list, even though it is an item that requires frequent replacement, and its production by non-specialized units requires at least 100 hours, high costs and the difficult solution of certain technological problems (forging, mechanical processing and thermal treatments). The list of similar examples includes: turbine heads for grit sanders and chain links for metal conveyer belts that are produced at the Baia Mare Metallurgical Enterprise; spherical head thrust bolts for eccentric presses made at the Sibiu Metallurgical Enterprise-guide bolts for universal milling machines made at the "Infratirea" Enterprise in Orastie and so forth.

Moreover, in our opinion, even in these situations the specification "time for the manufacture of spare parts" should not be found in the user's capital repairs technological file. This is so because the appearance of this "time" means that barely after the disassembly of the equipment and the calculation of the necessary number of parts that must be replaced (instead of drawing these parts for storeroom stock), the mechanical-power office completes production designs for these items, defines the technology to be used and gives the production order. Clearly, in such an organization a significant amount of time is consumed in the production of spare parts, which extends the timeframe for repairs.

In this case, one could ask: If the user enterprises know they will have to make their own spare parts, why do they not produce their own minimum stocks (economically substantiated and justified) of spare items and subassemblies? Perhaps for this problem many types of explanations could be found, but the main one stems from the fact, in our opinion, that with regards to capital repairs they still work on a provisional basis in the sense that periodic revisions, current repairs and organizational activities for capital repairs do not in practice have the necessary preventative nature capable of calculating, attenuating and anticipating the necessary

amount of spares and materials. Such a truly comfortable outlook must be effectively replaced by an improved activity within the framework of which overhaul work on fixed assets will ensure elimination of accidental interruptions and facilitate the supply of the necessary amount of replacement or reconditioned parts. Certainly, implementing this desire requires an increased organizational effort and a higher quality in overhaul equipment that will be used by highly trained workers who are competent in diagnosing ahead of time the wear areas that will be the targets of the main capital repair projects. And, it should not be forgotten that only in this way can we ensure the optimum on-time stocking of spare parts and, along these lines, decrease the time required for capital repair projects.

#### The Rigorous Substantiation of the Optimum Repair Period

In reducing the down-time of machinery and equipment, a substantial contribution can also be made by most judiciously establishing the time to begin repairs on fixed assets. The investigations carried out at the "Autobuzul" Enterprise show that there are frequent cases where capital repairs projects are carried out either too early or too late compared to the conditions imposed by the real wear rates of these fixed assets, a fact that leads to an increase in their down-time.

The cause is found not only in the failure to respect the provisions of the repair plan as a result of rush-work, but also, frequently, in the cases of distorting the number of hours the machinery, equipment and installations are effectively used. In this case, our observations show that in the primary records of the use of the maximum available time for machine-tools, in the "U" file, the actual time effectively used is not exactly recorded, with some down-time caused by accidental interruptions, shortage of manpower, the lack of power and so forth not being recorded. Thus, we arrive at a situation where, because of the erroneous information held, the equipment reach the point in time slated for repairs to begin, while in reality the number of actual operating hours is much less. In these cases, also uncovered during the checks made at the Bucharest Heavy Machine Enterprise, the time slated for the start of repairs does not correspond to the actual conditions of real use.

In order to eliminate the shortcomings that stem from this, it is desirable to maintain more exact records of the actual use of fixed assets by also systematically taking into account the down-time generated by the above-mentioned causes. More than that, knowing that the requirements to reduce energy consumption require the modernization of machinery, installations and equipment - projects that usually mean temporarily shutting down these fixed assets, it would be useful to have this outlined even in the capital repairs plan so that they could be carried out within the framework of the tasks that are contained in a section of an enterprise's plan. We make



this proposal since the current modernization of fixed assets is not covered by certain plan indicators so that in some enterprises (including "Autobuzul") they did not show in 1979 the plan goals in this area, even though it was proved that many modernization projects were absolutely necessary and which, up until now, were also carried out. And, since modernization projects are in their content and means of financing projects of an investment nature, it is also necessary, in our opinion, that they be followed-up like any investment project from an economic efficiency point of view, for attaining the projected parameters, for the timeframe to recover expenditures and so forth.

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FAILURES TO IMPLEMENT ENERGY SAVING MEASURES IN INDUSTRY

Bucharest REVISTA ECONOMICA in Romanian No 30,25 Jul 80 pp 10-11

[Article by V. Boescu and L. Tintea: "Energy Use Review and the Conservation of Energy"]

[Text] The rational management of energy resources and the reduction of consumption per unit of product, in general the conservation of every kilowatt-hour of electricity and gram of fuel, constitute the major objectives of the development of our national economy in the current period and in the future. "It is necessary to understand," stressed comrade Nicolae Ceausescu at the recent enlarged plenary session of the National Council of Workers, "that we can no longer go ahead with excesses, with high energy consuming technologies. This means great tasks for the economic ministries with regards to the replacement of old technologies with more advanced ones, and we have in our country the technologies that use small amounts of energy and fuels, and means the intensification of research to create new technologies that consume as little energy and fuel as possible."

In increasing the degree of management of energy resources and in decreasing or preventing losses, in recent years the completion of an energy use review has proven to be of real use. It has become a useful working instrument in the detailed analysis of the means in which energy is used in all its forms and by all the main consumers according to type (sections, work shops, power equipment, installations), showing the useful energy and losses stemming from the diverse energy-technological processes, as well as the measures required to eliminate waste and recover and use reuseable energy resources.

On the basis of such reviews during the past year, reuseable energy resources were recovered, at the level of the national economy, equal to over six million tcc. Similarly, by modernizing 32,600 burners, 876 boilers and 1,347 furnaces, energy consumption was noticeably reduced, with numerous enterprises staying within assigned quotas for energy and fuels or even making important savings. Contributing to this also was the fact

that a series of advanced technologies were introduced in place of those with costly rates of consumption, especially in the units of the industries of machine building, construction materials, chemicals, metallurgy and industrial construction. Despite all the remarkable results obtained, the activity of completing energy reviews and carrying out the measures stipulated in them still leaves much to be desired, which means an important volume of energy resources, including reuseable resources, are not being appropriately and efficiently used. What factors bring about such a state of affairs?

#### Increased Urgency in Carrying Out Reviews

There are numerous enterprises where the care for the rational management of energy and fuels is closely tied to the concern for carrying out the measures stemming from energy use reviews and for stimulating the creative initiative of the workers for the purpose of finding new solutions and means of avoiding waste and conserving energy resources in an ever more significant amount. At the Resita Metallurgical Combine, the Ocna Mures Soda Products Combine, the Dobresti Mining Enterprise (Bihor County), the Cimpulung Muscel Binding Materials Combine, the Anina Mining Enterprise, the Brasov Tractor Enterprise, the "23 August" and "Republica" plants in Bucharest, the Cimpia Turzii Metallurgical Combine, the Fagaras Chemical Combine and so forth, because certain such concerns, energy use reviews were made with a high degree of exigency by their own specialists in collaboration with those from institutes of research and specialized technological engineering and polytechnical institutes. Each provision has as its basis real measurements which allowed appropriate measures to also be established with precise time frames for execution, as well as a measurable level of efficiency. The hundreds of energy use reviews completed in this manner at different levels and systematically employed depending upon the new conditions encountered in the technological processes constitute true instruments of permanent action for use of energy and fuels with a maximum of savings. Thus, important reuseable resources were recovered (coking gases, burn gases, the heat from certain products, steam from cooling waters and so forth) which, used in production processes, contributed to the corresponding decrease of primary energy consumption.

Unfortunately, however, there are numerous enterprises where the carrying out of energy use reviews has not yet been completed (although 7 years have passed since the start of this action). In others, this activity has a formal nature, with the reviews not being carried out on the basis of real measurements. There are, similarly, numerous cases where, although good measures were established in the direction of increasing the degree of management of energy and fuel, this is not being achieved (in many cases 1-2 years beyond the time frames) or it is incorrectly felt that once the reviews are completed they do not have to be updated and so forth. Last year, of the nearly 29,000 necessary energy use reviews, merely 23,000 were carried out. Similarly, of the 16,000 reviews that needed to be updated, only approximately 5,000 went through the process. This situation

remained virtually unchanged through the first half of this year. Thus, a large number of burners, boilers and furnaces remained in operation, without being modernized, that have reduced efficiency and that wastefully consumed a large quantity of energy and fuels, noticeably diminishing the efficiency of the production activities of these units. In all, during last year reuseable energy resources equal to better than two million tcc remained unrecovered and unused.

#### How the Big Consumers Are Working To Conserve Energy

An analysis of the causes of the situations presented reflects different positions and attitudes from one unit to another. Thus, at the "Danubiana" Enterprise in Bucharest of the 265 necessary reviews, only 52 were completed. And even these, to a good degree, bear the stamp of formalism since they do not contain measures to improve the efficiency of installations or equipment. At the same time, nearly 630 tcc/year of reuseable energy resources are not being recovered, while, in exchange, large quantities of primary energy of being additionally consumed. At the Slobozia Chemical Fertilizer Combine, of the 292 necessary energy use reviews, 174 were carried out. Many of these are not complete since they do not contain measures to improve the efficiency of certain installations. Similarly, actions were not established for the recovery of over 23,000 tcc/year of reuseable energy resources and nearly 500 tcc/year of process gases that escape into the atmosphere. As a result of not taking appropriate measures, the combine registered a supplementary consumption of 750 MWH of electricity and over 10,000 tcc. At the Govora Soda Products Combine, because of a lack of concern for carrying out the good measures contained in the energy use reviews, over 32,000 tcc of reuseable resources continue to go unrecovered, in exchange consuming (in just 4 months in 1980) over 8,000 tcc and 882 MWH of electricity.

In other units, either because of not completing the energy use reviews or because of the failure to carry out the measures called for in the reviews, installations with low levels of efficiency and high rates of fuel and energy consumption continue to be employed. This is the case of the Pitesti Petroleum Trust, which has 143 hydrocarbon-run boilers with an efficiency of 0.5 to 0.6, leading to a supplementary consumption of between 37 and 64 percent. Even here, measures were not taken to recover the over 11,000 tcc of reuseable resources. This situation is also due to the fact that up until now the trust's units completed only 125 of the necessary 150 energy use reviews. Similarly, the Tirgu Jiu Petroleum Trust did not recover over 26,000 tcc/year of reuseable resources although it has technical-economic studies prepared for 15,650 tcc. The causes: delays in ordering the specific equipment, the failure to obtain on-time certain necessary investment funds and so forth. Here also there are steam boilers operating with an efficiency of 0.5 to 0.6 (leading to a waste of over 6,000 tcc/year of fuels) and the condensated water is dumped into the sewers (about 4,000 tcc/year) and so forth.

The lack of responsibility is also expressed in other forms, with the same negative consequences. Thus, at the Balan Mining Enterprise compressed air equipment continues to be used (turbine fans, push trolleys, electricity producing installations for lighting and so forth), although there are equipment in our country operated directly by electricity. This situation led to a supplementary consumption of electricity of approximately 3,000 MWh in just the first quarter of 1980. Although the problem was reported, there still is a lack of responsibility in accelerating the carrying out of the measures established by the specialized organs during the review of energy consumption in this unit.

At the Galati Metallurgical Combine, the investments slated for pipeline for transporting coking gases and furnace gases (from the new No 6 furnace that will soon undergo technological testing and the new No 7 and No 8 coking batteries) were removed from the plan, a fact that will lead to a loss of reuseable resources equal to over 80,000 tcc/year. Such a measure is unjustified since according to the norms in effect any new investment must also be equipped with the installations necessary to recover reuseable resources. At Galati it appears easy to go beyond such legal provisions. Otherwise it is not possible to explain why the No 2 heavy rolling mill, the semi-finishing rolling mill and the new stepped-hearth blast furnaces, although they were planned with heat recovery installations and pipelines to transport residual gases, did not have these installations built along with them. According to some calculations, at the projects that have gone into operation just this year over 300,000 tcc pf reuseable resources are being wasted. The Galati combine continues to exceed planned levels, month to month, by thousands of cubic meters of natural gas and KWH of electricity.

Similar examples can also be given. They but confirm fully that in industrial units, mining units, petroleum units and so forth, there still are great possibilities for the better conservation and management of energy and fuels and that there are still large and important unused reserves. The experience of certain enterprises attests that, in many cases, there can be an accelerated reduction of consumption through simple organizational measures, through the promotion of new technology and through the modernization of certain installations and the use of recovery equipment. But, for this, there is need for initiative, responsibility and a permanent check on the manner in which the proper measures are carried out. That is why the energy use reviews must be carried out with a maximum of attention on the basis of specific studies and analyses for each piece of equipment and at each work place by specialists in the field, with the cooperation of each work group.

Naturally, there are also situations where measures cannot be carried out because of a lack of certain devices and equipment. For a long time, for example, there has been a request to increase the capacity of the machine building industry in the direction of providing the necessary amount of



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recovery boilers, condensation kettles, devices for measuring, controlling, and regulating the burning process in boilers and furnaces, meters to follow the consumption of thermal energy and so forth. The lack of the appropriate equipment leads to the failure to respect certain contracts and the delay in deliveries of 1 to 2 years for different devices ordered by users. Delaying the production and delivery of these items, the units that need them make up for shortages themselves, using the reason that they cannot find the necessary equipment elsewhere. We feel that the planning organs, the technical-material supply organs and the Ministry of the Machine Building Industry should find optimum solutions for the most effective way to meet demands so that actual orders can be fully covered. This type of equipment (different from those for using other energy sources) can be amortized rapidly by each enterprise (about 1 year).

#### Necessary Actions To Recover and Efficiently Use Available Resources

During the investigations carried out among the ranks of the specialists in the enterprises, industrial centrals and research and technological institutes regarding the growing role of the energy use review in the management of energy resources and fuels, a series of proposals was formed, which we present here:

-- energy criteria must be taken into consideration right from the very beginning of the design phase for new projects or the development and modernization of existing ones, for the purpose of selecting the most appropriate technologies and equipment;

-- having the appropriate installations for the recovery of reuseable energy resources and the measuring devices for energy agents in the enterprises, sections and main consumers. For new projects, having the installations for the recovery of reuseable energy resources and devices for measuring and control should become a condition of acceptance of the project;

-- appropriate planning for the capital repairs for high energy consuming equipment, with these repairs being made on a priority basis during the periods of high demand on the national energy system;

-- the creation of work graphs (programs) approved by energy specialists and technicians that will concentrate the operation of certain furnaces into several days per week, ensuring during this period the production demands for an entire week;

-- analyze the possibilities for cooperation on the local scene (industrial zones, housing areas), regarding the use of available secondary energy resources from certain enterprises that cannot use the energy because of a lack of consumers.

With regards to the growing role of the energy use reviews as working instruments, a series of proposals was similarly made.

1) The method of completing the reviews, especially the parts referring to electrical use reviews, correct from a technical point of view, is difficult and requires a large amount of work that is not always equalled by the savings that the reviews uncover (in the case of electric action motors, the method involves determining the losses of copper and the losses in iron and mechanics, although these items cannot be considered separately since they are characteristics of the motors themselves). They could proceed as in the case of energy used for lighting, keeping in mind the nominal efficiency of the motor (eventually considering the variation in efficiency as load demand changes). Methodological simplifications would make the energy use reviews more accessible to the groups of energy specialists in the enterprises and would reduce the period of time for the so-called elaboration of the reviews in favor of spending time in the analysis of the reviews and establishing measures to reduce energy consumption.

2) Inversely, the method is liable to generate improvements of such a nature that it can effectively bring the energy use review to a physical production power unit (an installation) during the review period. This connection could be expressed through a specific energy consumption indicator resulting from the relationship between the energy entering the unit (minus the energy coming out and usefully used by another installation), expressed in units of energy, and the corresponding production (expressed in physical units). Such indicators could be determinants for power units or phases in the technological process, with these allowing comparisons of the results obtained by power units of the same type within the same enterprise, in different enterprises or even abroad. The use of certain specific consumption indicators as a value expression of production, KWH/1,000 lei, for example, in addition to not allowing a comparison with the achievements in other countries, is not stimulative and reduces the level of these indicators capable of being achieved through changes in the structure of production and through the use of more expensive materials, without, however, achieving a real reduction in the consumption of energy.

3) The move to drawing up energy use reviews by area, industrial complex and groups of neighboring enterprises, regardless of their subordination, serves as the basis for analyses that can show the possibilities for the common use of certain high energy consuming installations (for example, compressor stations), for the use of certain energy resources from one enterprise in another and so forth).

4) The analysis of successive energy use reviews completed in recent years for a certain enterprise, that is, moving from the "photograph" phase to the "film" phase. It is felt that this can show the favorable or unfavorable influence of certain technical and organizational measures, changes in the type of production or equipment, reorganizations or other events in the life of the enterprises.

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